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# Computer Weekly

Thursday, January 20, 1983

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## BTG seeks City backing of Inmos

by Kevin Cahill  
THE British Technology Group is speeding plans to raise private finance for Inmos in the wake of further controversy over production plans at the State-funded chip maker.

According to BTG director Christopher Bostock, a prospectus has already been produced and he hopes the City will take a more optimistic view of the company this year.

Last year the City rejected proposals for investing in Inmos, and one broker who was approached last year said that the forecast profits for 1984 would have to be very visible before brokers would recommend investment.

The Bostock response was that the City would be able to see profits in 1984. The latest round of controversy, which follows allegations in the *Sunday Times* that Inmos management had transferred

profitable 16K RAM production from Newport to the US plant in Colorado, could not have come at a more embarrassing moment for both the government and BTG.

Less than a month ago Industry Minister Patrick Jenkin had to do a rapid volte face on his earlier decision not to give Inmos any more state funds.

A sudden cash squeeze, brought on by rising production and the fall in sterling, forced Jenkin to allow the BTG to offer Inmos £15 million in additional funds.

With Industry Ministry officials embarrassingly pointing out that the money is not coming from the DoI, but from existing BTG funds, the BTG acknowledged that agreement on the injection has still not been reached.

This raises the possibility that any assault on the government by either the Opposition or its own backbenchers could result in the loss of the funding.

According to Bostock the reason agreement has not been reached is a failure to decide on the valuation of the stake in the company held by Inmos founders Iann Barron, Dick Petritz, and Paul Schroeder. (Schroeder is no longer with Inmos).

None of the directors was available for comment, and the company was also maintaining total silence on the position, other than to confirm that the 64K DRAM production was moving to the Newport factory.

The *Sunday Times* alleged that the 64K production was unproven and facing intense competition from Japan, but Inmos founder Iann Barron claimed that test production of the 64K at Newport had been successful and that yields were good.

Barron further predicted that employment at the Newport factory should reach 1,000 "next year".



BARRON... Employment at Newport should reach 1,000 "next year".

## Quest hands CAD/CAM interests to Arab firms

by Andrew Thomas  
QUEST Automation has very recently pulled out of the CAD/CAM market. A £2 million cash sale from the Arab Research and Development Trust, via two companies, will be used for R&D and part of the open company, leaving the majority of the company as a subsidiary product of the original company.

Should the deal get through, Quest shareholders, as board is recommending acceptance, the group will be liquidated and the company will be sold to the Arab Research and Development Trust, via two companies controlled by the Arab Research and Development Trust.

Quest is due to announce year-end results soon and analysts predict that the £11 million loss in the first half will be reduced to around £6 million mark by improved half performance.

Quest has had cash problems ever since the reduced demand for its CAD/CAM systems. In the half-year ending February 1982, pre-tax loss amounted to £2.86 million, compared with a profit of £300,000 in the same period in the previous year.

Last October, government-backed talks aimed at saving the UK "super" CAD/CAM company with Compaq and Bentley came to nothing, leaving Quest in the unenviable position of a cash-strapped company with no prospect of a takeover.

Quest managing director, Ebel was unavailable for comment.

## Way open for IBM at licence centre

by Kevin Pearson  
HONEYWELL has paved the way for IBM to get the prestigious Driver and Vehicle Licensing Centre computerisation contract at Swansea by withdrawing its application, though IBM will not get a "rubber stamp" on its bid, according to the CCTA.

A statement from Honeywell said: "After a full technical evaluation and a detailed examination of system requirements and constraints it became clear that the huge conversion task required made it uncertain that the project could be carried through in the lead down timescale entirely free of risk."

The company told both the DVLC and the CCTA of its decision. But IBM cannot expect to get the £16 million contract purely because there is no competition. A spokeswoman for the CCTA told *Computer Weekly* that IBM would have to go through the full "technical evaluation to prove that it can deliver the goods required within the required timescales."

A decision is now expected in

early summer, instead of late summer, the spokeswoman said.

She said the stories saying IBM had won were misleading. "IBM has not won." But there can be little doubt that IBM will be able to deliver the necessary systems. Or that it will put its full technical might behind its bid, even though the £16 million contract is said to be worth as little as £10 million to the company which has just announced a record year for 1982 with sales of over \$34 billion.

IBM has made such a fuss about public sector contracts in the past, in company with other US-based computer manufacturers, that it would have no choice but to continue even if it felt as Honeywell does about the "risk."

IBM was furious when ICL was awarded the PAYE mainframe contract in 1980. It was so incensed that it refused even to tender for the peripherals contract, itself worth as much as the mainframe deal.

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BROAD... A step in the right direction.

## 'Buy British' slant in new list of govt micro suppliers

by Robert Parry  
GOVERNMENT micro buyers are to face a new choice, and it is predominantly British. The list of standard microcomputer suppliers drawn up by the Central Computing and Telecommunications Agency has had a thorough facelift, with only two of the present eight remaining.

Of the 12 computers on the new list, seven are made in the UK and one is about to start doing so.

Out goes Commodore, along with Research Machines, Thame Computers, Equinox and Wilkes Computing. Modas is replaced by Digital Micro Systems, while Apple and Casu move on to the new list. In come ACT and DEC, though only with its Rainbow and DECmate machines, along with British manufacturers Comart, Future Technology Systems, Lo-

gica, Torch, Videcom and ICL with its DRS and Personal Computer. Digital Micro Systems, which is soon to start UK manufacturing and Mideltron make up the dozen.

The machines are split into three categories: low-cost general purpose micros, systems stretching from single to multi-user operations and microcomputers for scientific use. The proportion of British manufacturers on the new list was welcomed by David Broad, chairman of British Micro Manufacturers Group. He has double cause for celebration as he is also chairman of the Comart group, which has joined the select band.

"It is a step in the right direction," says Broad, "but BMMG policy remains that any list which excludes member companies with products suitable for government applications is short of what we want."

He now sees a role for the British manufacturers and the CCTA to open up the market for micros in government offices.

New CCTA director, Paul Freeman expects a boom in government purchases of microcomputers and expects about 2,000 systems to be bought next year at an estimated average price of £8,000. Over the last two years only 700 systems were installed.

The make-up of the new list, with British manufacturers well placed in all the general application areas, will make it likely that the bulk of these government-bought micros will come from the British manufacturers. It is up to the purchasing departments to buy British now.

## ICL shuts Reading centre

ICL is closing its Reading Systems Centre, and the 56 staff are to be redeployed within the company. The centre was originally run by ICL's facilities management division, Datasilk, and provided test bed facilities for customers about to install ICL machines. The centre was taken over by ICL's in-house DP operation, Corporate Information Services (CIS), when Datasilk was closed 18 months ago.

The work run at the centre in recent months has been mainly for other ICL departments, and the reorganisation has left CIS over-equipped with hardware.

## Damages awarded

MASTER Resources Ltd has been awarded £51,000 damages from TSB Computer Services (Wythenshawe) by an independent arbitrator. MR of Cheshire had been seeking £1.5 million for breach of contract.

## Atlas first

ICL chairman Sir Christopher Laidlaw announced at Tuesday's annual meeting the first commercial customer for the Atlas 10, an indication of increased sales and profit in the first half of fiscal 1983, and the reorganisation of overseas marketing. A Salisbury, an IBM site, ordered the Atlas 10, worth up to £10 million.

## Microsystems 83

THE Microsystems 83 exhibition scheduled to take place in London next month has been merged with *Computer Weekly's* new Computer Trade Show, to be held from April 26-28 at the Wembley Exhibition and Conference Centre. See page 8 for more details.

## User groups welcome microcomputer boom

by Philip Hunter  
THE onslaught of personal computers is being cautiously welcomed by the major groups representing users of larger machines. But the user groups do not expect a sudden surge of new members.

"We don't expect floods of people into user groups," says John Grant, chairman of the IBM computer users association (CUA). "The hobbyist will enter local user groups in a pub somewhere." Otherwise the personal computer will mainly be just an addition to existing small business systems, Grant adds.

The ICL CUA has so far been unaffected by the personal computer because one of the rules of membership is that the machines have to be bought directly from the company. The ICL Personal Computer is not sold directly by ICL, but through the Tradepoint scheme for dealers set up early in 1982.

"Maybe we will have to change our rules for the new situation," says ICL CUA vice-chairman John Atkin. But users of the larger ICL DRS range of microcomputers are already eligible to join, Atkin adds.

## LINE NOISE

UNIVERSITIES could soon be thanking their lucky IBM stars. Following the relegation of the 3081 D to "has been" status last year, Big Blue found that it still had a few left lying around. Rather than have these monsters cluttering up the corporate floor, IBM is offering "can off cheap" - but only to academics. A 20% discount rate over the last list price is being offered in the US, according to sources. The position in Europe varies country to country, but big savings are in the offing.

DESPITE having a considerable investment in ICL mainframes, the BBC chose to go outside for computing resources for its new World Reporter database for journalists. Datasolve's IBM 3081 got the job of running the database following an investigation into which machine should be used. Despite the application being almost tailor-made for CARS, the report advised against the use of the ICL machines on financial grounds. It is difficult not to smell the unpleasant aroma of politics triumphing over technical recommendations in the deal.

IBM is rumoured to be setting up a specialised leasing operation in the UK along similar lines to the one announced last year for the US. The broker backing the US organisation is Merrill Lynch. Rumour has it that the National Westminster Bank will be underwriting IBM's UK leasing. How's that for true blue support?

## US, UK firms in cable venture link

by Donald Kennett  
THE latest UK-US joint venture in cable television will champion the cause of advanced techniques. Cable & Wireless and the Charterhouse banking and investment group have teamed up with Comco Cable TV, which is claimed to be the US leader in designing and building twisted optical fibre networks.

The two UK partners will each own 40% of the new company, Cable TV Construction, which will specialise in advising applicants for

network operating franchises, as well as in constructing networks for the successful ones.

Charterhouse has been studying the market potential for nearly two years and has decided to concentrate on construction, through this joint venture, and on financial services to franchise applicants.

By next year, Charterhouse believes, spending on network construction will have reached £400 million a year in the UK.

As well as providing financial expertise, Charterhouse will call

on the expertise of its gas pipeline contracting subsidiary in installation, obtaining wayleaves and negotiating with utilities. It also owns a design and draughting contractor and a tool hire and contract maintenance company whose services will be called on.

Cable & Wireless will draw on its experience in installing and running public telecommunications networks in 29 countries and in supplying turnkey networks and computer systems to companies in the UK and abroad.

## Optim-MCS range is 'set to challenge DEC'

by George Black  
THE takeover of the American MCS by Optim this week will give the new joint venture a range of systems from £2,000 up to £320,000. Mike Burden, chairman of Optim, signed the deal with MCS' president, Michael Brennan, at the Which Computer? show in Birmingham on Tuesday.

Optim was formed only six weeks ago when its parent Monotype decided to hive off its computing enterprise and concentrate on printing services. Beginning life with a 150 customer base and installations valued at £4 million, Optim has now acquired a firm with a £3 million turnover and a customer base of £7.5 million, including Shell, BP and Taylor Woodrow.

Burden, previously managing director of Singer Business Machines and Midland UK, said that the product range and capability would rival and exceed that of DEC.

At the cheap end, Optim is to market the new Amiga micro, made by the US Intel, as well as its old Ace range. The two manufacturers' ranges will overlap in mid-market, with MCS offering the larger systems. Their main target will be the hotel and catering industries for which they intend to provide turnkey hardware and

software systems. Work is under way on a common operating system for both ranges. It should be available in July.

MCS Mini-Computer Systems of New York specialises in multi-user and multi-process systems. Brennan will continue as a director, joint managing director with Burden of the new combination will be John Richards, formerly of NCR and Ventec.

MCS was founded in 1967 as a software company, moving into hardware in the early 1970s. It expanded into Canada and Europe and set up a UK branch in 1976.



BURDEN... Signed up MCS

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## Jenkin under fire on Inmos delay

by Kevin Cahill  
INDUSTRY Minister Patrick Jenkin has come under fire from Welsh MP Roy Hughes as discussions about the future of Inmos drag on.

Hughes has asked Jenkin in a letter to allay fears that Inmos could turn into another De Lorean.

A clear-cut statement is needed on the future of the factory in Newport, said the MP, adding that the entire political establishment in Gwent was concerned about the

situation. According to Hughes, who visited the factory recently, only 180 people are employed there, although Inmos has constantly sought to reassure MPs that

Leader Comment - page 15

the company is meeting its commitments on employment made when the government reluctantly agreed to advance £25 million to build the Newport factory.

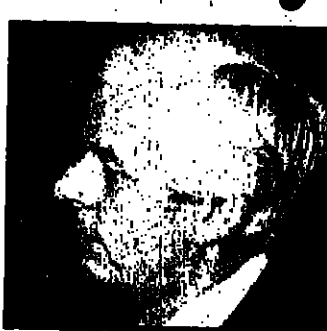
But because the details of those commitments have never been

revealed, many observers have difficulty in accepting Inmos statements on the matter.

Jenkin is also under fire from the Tory backbenches. Conservative MP Michael Grylls, who campaigned against the government investment in Inmos, said that any more money for the chip maker would "be over my dead body".

Grylls has submitted a Parliamentary question asking Jenkin to make clear how much public

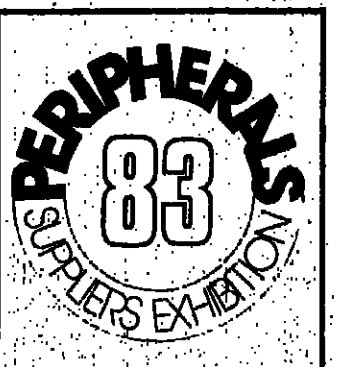
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IBM group to let in PC users

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## Home Office looks into micros for the police

by our Parliamentary Correspondent

THE Home Office scientific research and development branch has been examining ways of using microcomputers in major criminal investigations and of transferring data from a micro to a larger system where greater capacity is required.

Patrick Mayhew, Minister of State at the Home Office, said in a Parliamentary answer that the work should be completed in the spring. Guidance would then be issued to chief officers of police.

Mayhew disclosed that the Home Office has been in touch with the Chief Constable of West Yorkshire about the provision of computer assistance to help officers investigating major crime.

There had been criticism of the lack of computers to help narrow down the list of possible suspects in the Yorkshire Ripper case.

A further outbreak of attacks on women in West Yorkshire has prompted the Home Office to keep in close touch again with the Chief Constable on the subject.

In conjunction with the Essex police, the Home Office scientific research and development branch has been conducting an experiment intended to provide, in the longer term, a computer system specifically geared to major criminal investigations.

Meanwhile, said Mayhew, certain Police National Computers have been made available on an experimental basis to the officers investigating a number of attacks on women in Surrey and the Metropolitan Police District.

These facilities are additional to the PNC files normally available to police officers in criminal investigations.



BARNES... Worried about the cost of data protection

## Local authorities fear privacy cost

by John Riley

THE Data Protection Bill could cost local government £22 million to pay for registration and revision of computer systems, according to the Local Authorities Management Services and Computer Committee (Lamsac).

"We welcome the Bill," said Roy Barnes, director of Lamsac, "because we have been in the twilight zone too long, but we are concerned about the cost at a time when local authorities are being asked to economise on every front."

The 10-year-old Lamsac Working Party on Data Protection estimates that it will cost local government £11 million each year over two years to implement the changes. So far there has been no indication of where local govern-

ment can expect to find the funds for this.

Our Parliamentary Correspondent adds: Serious misgivings felt among Labour Party members about the Data Protection Bill were voiced by Lord Elwyn Jones, a former Lord Chancellor, in the Lords Second Reading debate.

He welcomed the appointment of a registrar to maintain a register of personal data users and computer bureaux. But he questioned how independent the registrar's office would be.

He feared that if the Bill were enacted in its present form it would mean that highly confidential and sensitive information could be secretly disclosed to the police, the Inland Revenue, Customs and Excise and the immigration authorities without any indi-

cation on the Data Register that anything of the kind was even possible.

He regretted that the government's approach to the Bill had been to get away with little compliance with the Convention for the Protection of Individuals as it could.

The Liberals also wanted the government's proposals grounded that they would be little more than bare copy with the terms of the Convention.

Lord Wigoder, the Lib spokesman, told the House the Bill was like "attaching a fish with a wad of cotton wool". Several peers wanted manual systems of filing included in the Bill as well as computer stored data.

## Japanese micro makers to push hard into UK in 1984

by Robert Parry

JAPAN'S micro makers will move into the UK in earnest in 1984.

"The Japanese companies are putting roots down this year," says Hitachi's computer products division manager, Ted Marshall, "ready to press hard into the market. We should be judged by our 1984 performance, not on 1983's."

Hitachi has now officially launched its 16-bit business microcomputer, first seen here at the end of last year, but is still taking things slowly.

"It's not a go or bust situation

for us," says Marshall. "We can afford to take our time."

Volume shipments will not start until June this year for the IBM-compatible 16001, when Marshall hopes to have a network of 100 dealers in place. So far he has appointed only one, London-based Bomsal, but has been approached by 700. Through these and by direct sales into large companies Marshall reckons he will move "tens of thousands" of machines.

One reason for the steady build-up of shipments, rather than a sudden lurch, is to secure a good software base - a task which does not seem too difficult given the 16001's MS-DOS operating system and IBM PC-compatible floppy drives. Already 25 packages are running on the machine, from some of the 65 software houses that Marshall says have been moving programs across. These include Compact Accounting and Lifeboat Associates.

When the machine does get here it is likely to sell for £2,500 to £3,000. The price is still unfixed, and will depend on the relative position of the pound and the yen.



MARSHALL... "We should be judged by our 1984 performance"

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## Way open for IBM

From front page.

Then, in 1982, it took action against the Severn-Trent Water Authority after it had tendered for a contract and won the technical evaluation only to see the installation go to ICL.

IBM was overtaken by events in that case, and was effectively forced to withdraw its High Court action, though it reaffirmed its principle that it is as British as ICL.

The DVLC installation has always been troublesome. The present ICL System 4s were installed in the early 1970s, but these machines had already seen life under three different badges - ICL, English Electric, and the US telecommunications giant RCA.

RCA originally developed the machine in the 1960s to compete against IBM's System 360.

IBM results - see back page.

## Software houses clash over financial package claims

by George Black

A WAR of words has broken out in the financial software package business. After Northern Software Consultants made big claims for its latest launch of real time products this week, other firms in the field came back quickly with criticism.

Howard Sherrington, of Northern Software said accounting packages which were not both database and real time would look obsolete in two years.

"Anyone who buys this type of package is wasting their money," he said. Most packages on offer in the UK were no more than Seventies batch programs given a facelift to look like Eighties software, he said.

The real time label could only be justified if database masterfiles were instantly updated, he argued. He claimed his company was now

the only one in the world which could offer identical systems of this kind across a range of mainframes.

But Management Science America countered that its mainframe online systems had proved "extremely acceptable" to clients.

"I've a jaundiced opinion of Northern Software's statement," replied MSA's Martin Judd. "There is no way we would be spending \$20 million a year on developing systems that were out of date."

Operations which needed to be handled in real time - such as accounts receivable - were done that way; for others, which users did not want in real time, such as fixed assets and nominal ledger - MSA had not provided it.

Berger Paints weighed in on Northern Software's side, with en-

thusiastic support from its director John Coyle for the company's sales ledger package.

"It's the first time in my experience this system has been possible for a single company to achieve performance in a few months. It gave up-to-date information on customer, processing clerks used to paper sales, credit control clerks and 99% of transactions through in under five minutes."

David Elise of the Northern Software Centre, which began in Norpuria-2 with a grant, had gained a lead over the company in competition which he held on to.

But Package Program commercial director Szydlowski said not all needed real-time production machines to handle them.

## Union warns Telecom of 'industrial anarchy'

by John Kavanagh

A BRITISH Telecom union has hit out at plans to give the 61 telephone areas greater autonomy. The union argues that the plans could lead to the disbanding of BT's 3,000-strong central data processing organisation and "industrial anarchy" as different areas go their own ways on computing.

The Society of Civil and Public Servants claims that even major projects such as telephone billing could give way to local systems.

BT is giving area managers greater control of their local business so that they can fight off competition as BT's monopoly is watered down. But the union says this means they will no longer have to use the big ICL mainframes at 10 centres across the country or even refer to BT specialists before buying their own hardware and software.

"You only have to visualise 61 pin-striped Davy Crocketts charging off to re-invent the wheel to see the force of it all," said a union spokesman.



GRANT... "The question is how wide we open the doors"

## PCM users may join IBM 'club'

by Kevan Pearson

USERS of IBM compatible computers could soon be eligible for membership of the IBM Computer Users Association.

The issue was discussed at the last CUA council meeting in mid-January and CUA chairman John Grant believes that a decision could be made by the summer.

"There is strong pressure to open the association to companies using IBM software but not IBM CPUs. The question is how wide we open the doors. There is a strong lobby in favour, but the council is being very cautious," said Grant.

At the moment, CUA membership is limited to the users of IBM CPUs, which locks out an increasing number of companies which use IBM software running on plug-compatible hardware.

The CUA has been in existence for 25 years and its rules for membership were drawn up when IBM

bundled its hardware and software together in a single package.

It was when IBM was forced by legal action in the US to unbundle its software that the plug compatible industry became seriously viable.

There is a group representing users of National Advanced Systems CPUs. But this deals only with matters relating to the computers themselves and the manufacturer. As Brian Hedge, chairman of the Independent Computer Users Association (ICUA) and assistant general manager of Pearl Assurance points out, the computer itself accounts for an ever decreasing proportion of the overall DP budget.

Hedge and Grant recently held informal talks on this topic at the behest of ICUA members.

"ICUA members are paying more for software systems and peripheral hardware today than they are for their CPUs. We have

some very large systems users in the ICUA who are big users of IBM software and peripherals," says Hedge.

Proposals before the IBM CUA provide for users of IBM software to become CUA members irrespective of their choice of CPU. This would allow members of the ICUA, for example, to become IBM CUA members while retaining ICUA membership.

The CUA is polling its members to see how IBM's December price rises have affected the bills in order to determine what action to take next in its price battle with IBM. The CUA made a formal complaint to IBM over the rises last year. IBM reacted by attempting to justify its position on price rises during periods of high inflation. IBM over the last three years has had price rises every six months.

## Commercial success for university company

by Robert Parry

A GOVERNMENT-backed company set up to exploit ideas born in British universities is finding commercial success. Xtec, backed by £250,000 put up jointly by the British Technology Group and venture capitalist Prutec, has refined its terminal access controller, TAC, and turned it to a more appealing product for commercial markets.

Since September, when Xtec separated from Cavac with the BTG/Prutec backing, 13 TAC systems have been sold, and a good base of firm order enquiries built up, says marketing director Peter Maple. He anticipates £1 million turnover by the end of 1983.

"There's a lot of potential in the universities," adds managing director Tony Blake, "and we aim to bring it to market. It's today's technology - tomorrow's almost - today. We can get it out there fast."

The TAC started life in London's Imperial College, where it was designed to furnish Imperial's

own in-house connection requirements. It is a data switchboard, software controlled, that can link any RS232 device connected to it to any other. Nearly 30 systems were sold by Imperial or by Cavac, but through customers approaching the makers rather than through active marketing.

"What the backing has done is to give us the resources to market the TAC successfully and to give more weight to product development," says Maple. Product development has included redesigning the hardware to give more modular kit, and the addition of a range of interfaces and protocol converters to cater for commercial users who need more than just a data switch.

A range of British-built modems will be added soon, says Maple. Its main competition comes from established data switching companies like Gandalf and Microm, but Maple reckons the flexibility and low cost - around £70 per channel in large systems - will make it a winner. A single box can handle up to 256 devices, and the TACs can be cascaded.

The main market seen for this "system putty" is existing multi-service users who need to connect a wide variety of equipment together and do not fancy hard wired patch panels or local networks.

"Everyone is talking about networks," says Prutec technical business manager Marek Schor-Rylski, "but what about the people putting systems together who get it wrong? In Xtec's TAC we are investing in an ability to recover, in making mistakes non-fatal."



BLAKE... "There's a lot of potential in the universities."

## US losing 'super' lead

by Howard Karten

THE US is in danger of losing its lead in supercomputers. Without a national programme aimed at developing and making accessible the next generation of supercomputers, there appears little likelihood that the US will lead the world in this area.

This is the conclusion of a report prepared by a Defence Department-National Science Foundation panel of experts.

The panel, led by New York University Mathematician Professor Peter D. Lax, found current computers "several orders of magnitude too small for problems of urgency in science, engineering and technology" and generally regarded as

requiring supercomputing include geophysical and seismic exploration, weather prediction models, nuclear weapons design, atomic research and modelling.

The two US firms regarded as supercomputer manufacturers are Cray and Control Data Corp, both in Minnesota.

The panel noted that the Japanese government had begun a project to develop a machine 1,000 times faster than today's machines by 1989. That effort is being undertaken in a joint government-industry program, as is common for many such large undertakings in Japan with commercial implications. Federal financing levels of any such project in the US were "insufficient," the panel stated.

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Towards the total system.

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# UK telecoms is awake — Baker

by John Riley  
THE LAUNCH of Plessey's integrated digital exchange (IDX) last week marks the awakening of the British telecommunications industry, according to Information Technology Minister Kenneth Baker.

Speaking at the launch by Plessey Office Systems, he said, "Up to now things have been a bit sleepy in telecommunications, and Britain has lost its share of the telecommunications market." He considered that the IDX was a sign that "industry is now responding positively to new challenges and opportunities in this field."

In the Commons last week Baker reported, in a written answer, that liberalisation of British telecommunications should be near completion by July.

Where the programme had fallen behind the government's original targets, interim schemes

had been introduced. Further schemes would be brought in, if necessary, he said.

Plessey's new system, IDX, employs time division multiplex switching with pulse code modulation of signal information capable of switching voice, text and data information over transparent 64 Kbits per second transmission paths.

IDX employs custom designed LSI circuitry. Ian Maclean, chief executive of Plessey Office Systems explained, "You have to design your own LSI now and put it into your systems."

The CPU is a Plessey developed system providing the processing power of the Nova series of minicomputers. The memory is 256 Kbits DRAM with floppy backup. Other hardware elements include the I/O bus switch, memory controller and a real time clock.

The speech sampling rate is 8 kHz with CEPT 8-bit A-law encoding as recommended for British Telecom's network practice. Approval was obtained just before Christmas for connection to BT networks giving IDX the edge over the Canada company, Miltel's, rival large PABX.

There is complete compatibility with System X and ISDN (the integrated services digital network that will combine telephone, telex and data communications), and IDX can form the heart of Plessey's integrated business information system (IBIS) launched last June.

Plessey announced orders worth £4 million for IDX which will be distributed in the UK by Plessey, Telephone Rentals and British Telecom Enterprises. The UK annual market for large PABXs is worth some £52 million.



BAKER... "Up to now things have been a bit sleepy."

## Exhibition shows the latest 16-bit micros following IBM trail

by Robert Parry  
IN the wake of IBM's long-awaited European Personal Computer launch, it was all too easy to miss the variety of 16-bit micros from other manufacturers that put in first appearances at Birmingham's Which Computer? show last week.

Companies from Japan, from the US and Europe had new — or newish — machines to throw at the booming business micro market. And the bulk of them follow the IBM route to Intel processors and MS-DOS compatibility.

From Japan came 16-bit additions to top up the personal computer ranges offered by Sord and Sanyo. The Sord machine, the M343, is built around the Intel 8086 processor — the fully 16-bit brother of the 8088 picked by IBM — and will run up to eight users.

A basic single-user system, with 256K of RAM, twin eight-inch floppies holding 2.25 Mbytes and a monochrome monitor weighs in at £5,100.

This basic configuration is expandable up to 768K of RAM, with Winchester discs and high resolution colour graphics available. As with Sord's Z80-based eight-bit micros, the company's Pips language is supplied with the system, to give easy-to-learn programming to new users.

Using the 8086 chip opens up the way to MS-DOS and CP/M-86 operating systems.

Another new Japanese face was the 16-bit 4050 from Sanyo. This is now being shipped by Sanyo itself and by its distributor Logitek. The 4050 also uses the 8086, with an added 8087 co-processor to speed up maths operations, and comes with 228K of RAM expandable to 512K.

CP/M-86 comes as standard, but MS-DOS will be available as an option soon. Peachtree application software is supplied for the machine by Logitek.

The Sanyo is a single-user machine, brought in by Logitek to fill a gap at the low end of market. It is not as powerful as the Altos range it also distributes. The Altos 586 range made a joint debut with Logitek — which has just had its number one position among Altos' European distributors confirmed for another year — and Microtec.

The 8086-based 586 series covers floppy and hard disc machines for five to eight users, with Xenix, Plick and Oasis-16 operating systems added to the normal CP/M-86 and MS-DOS offerings.

Eager not to be left behind in the micro race, Finnish minicomputer



COX... Nexia's friend the Fin... for IBM?

Nokia, specialising in banking and point of sale systems, announced and showed a 16-bit machine. The MPS4, to be known as Frend in this country, will not be available until the second half of the year, according to Nokia (UK) managing director Peter Cox.

But when it does appear it should come in at below £4,000 through a network of dealers, distributors and OEMs and by direct sale.

"We will be very competitive on price," says Cox, "as well as offering good performance and features." The machine uses Intel's 80186 chip, a faster and more highly integrated version of the 8086 which is now moving into volume availability.

## NatSemi shareholders claim damages for 'business malpractice'

by Kevin Pearson  
A GROUP of National Semiconductor shareholders are suing the company for damages in a suit which alleges business malpractice by its senior management.

The suit makes three allegations. First, it claims that pre-tax profits were overstated by a total of \$32 million in the four years up to 1980. Secondly, that it defrauded the US government by supplying sub-standard components which led to its suspension as a supplier to the US military. And finally that it was implicated in stealing trade secrets from IBM in the Japcom case.

The plaintiffs in the case are claiming damages commensurate with the losses they experienced on their investments in the company resulting from the alleged wrongdoings.

A spokesman for NatSemi denied all the charges, adding that

the company would file a complete reply to all the allegations by the end of January.

The allegations are made in a class action suit. In the US this means that if the courts find against NatSemi then all investors will be able to claim damages.

It is up to the US District Court judge to decide whether the case can continue on a class action basis, or whether individuals will have to sue the company themselves.

The allegations claim that the company's actions falsely inflated the value of NatSemi shares over the period 1977 to 1980, after which the share price fell, resulting in heavy losses for some of the shareholders. The plaintiffs will seek to prove that NatSemi took the actions stated, that they caused the company's shares to be overvalued, and that losses were incurred by shareholders.

## Ex-beauty queen joins the micro board

by John Kavanagh  
AN ex-carnival queen has struck a blow for working mothers by becoming a director of an Ipswich microcomputer retailer and consultancy, Micro Management.

Jane Drury joined the company two years ago and has been made a director just as the firm moves into manufacturing with its own graphics tablet and light pen for the Apple and BBC microcomputers.

She has a six-year-old son, Oliver, and a husband in the catering business.

"I'm a damned sight better mum than I would be if I were stuck at home all day," Drury said. "I put in more effort to do things with Oliver at weekends than I would otherwise. And we couldn't afford things like ski-holiday breaks with him if I didn't work."

"Working mums can make it work. You just need to keep your self organised to the task."

Drury delivers Oliver to school in the mornings and a child minder takes him after school and to the bank.



DRURY... "Working mums can make it work."

Directors are incredibly understanding," said Drury. "They give full encouragement to anyone in-planting with them."

Drury's experience includes working in operations on the ancient Atlas computer at the Atomic Energy Research Centre at Harwell and two years in its sister organisation, CERN, in Geneva.

## SALES BRIEF

### AT&T give \$100m deal to its own unit

US telecommunications giant AT&T has given a \$100 million contract for a fibre-optic communications system to its Western Electric subsidiary.

AT&T aroused criticism in 1981 when it placed a similar order with Western Electric instead of a lower bid from a Japanese company.

### UK scoop

A UK instrument maker has scooped a £2.5 million order from New Zealand for computer equipment to monitor law at plants near Auckland. The job was placed with Taylor Instruments of Stevenage, Herts, by New Zealand Steel Development and includes five MOD 3606 computer systems as well as luminous panels and associated field instruments.

### SyFA for ICI

ICI has picked Computer Automation for an online data entry validation system to be used in Petrochemical and Plastic Division. For £120,000 ICI will do text editing and text input facilities with the CA SyFA Mini minicomputer.

### Camp order

BURROUGHS has sold £100,000 computer system to Scouts Shops, owner of Camping and Outdoor Centres. The £100,000 will replace Univac BC7 for standard applications.

### ICL double

ICL has pulled off two orders worth £850,000 for factory equipment from the Dory Engineering Group. The orders are based on ICL's 29 online manufacturing control package which has 90 sites worldwide and provides video terminals to control most aspects of factory production.

### Training system

BARCLAYS Bank has bought three Rediffusion Telecentre computer systems for £250,000 to train its pilot video training system. The order includes 10 Telecentre intelligent desktop terminals with storage for 10 pages of information.

### Sixth Trace

NATIONAL Giro has bought a sixth Trace document reader sorter from Recognition Systems, a unit of Slough. The £50,000 Trace 1 is used to read payment counterfoils, bank licences, postal orders, and counterfoils for fuel bills.

### First for AIM

THE first ICL ME29 to be sold as a Tradepoint dealer has gone to a Hull-based North British Finance Group. The £165,000 ME29 45 deal was pulled off by Automatic Information Management (AIM) against competition from IBM and represents the largest single order to date from a Tradepoint distributor.

### Ice exports

INDEPENDENT Computer Engineering (Ice) has signed a £1 million deal to supply Winchester sub-systems and multiplexers to two West German companies, Suess and Wapco. Ice, based in Ashford, Middlesex, has a £1 million turnover, 70% of which is earned overseas.

### New market

PLESSEY has broken into the Scandinavian market with a CDSS digital telephone exchange sold in the UK as the Nordic following a 10-year agreement with Telefon AB, Finland's largest

## Survey aims to catalogue UK research projects

A LONDON consultancy is attempting to catalogue the increasing number of UK research projects in expert systems. A survey is being carried out on behalf of the Central Computer and Telecommunications Agency (CCTA) by Consultants in Information Technology (CIT) which has issued a questionnaire for the purpose.

An expert system is deemed to consist of a knowledge base and a program designed to draw conclusions or offer intelligent advice from the base. Most of the expert systems now being used in the UK are based on rules and are capable of justifying their lines of reasoning on demand.

CIT's Alex d'Agapeyeff thinks that most of the responses to the survey will come from users of rule-based systems, and the questionnaire reflects this with the major systems like SPL's Sage being mentioned.

"But we don't want to be so dogmatic as to leave out others," said d'Agapeyeff.



D'AGAPEYEFF... Hopes to finish his survey in two months.

The duration of the survey will depend on the response, but d'Agapeyeff expects the results to be published in late spring. "If it turns out we soon get the major people, we hope to close the thing

in two months," he said.

The idea for the survey came after a CCTA visit to US expert systems centres.

\* Questionnaires available from CIT, 60 Wildwood Road, London NW11 6UP.

## 'Most sophisticated' DEC database claim

by George Black  
A £1.25 MILLION system being designed by British Software House Altergo will feature one of the most sophisticated DEC databases yet written outside the US.

This claim was made by David Joice, managing director of Altergo (Ireland), when the contract with the United Arab Shipping Co. was announced last week.

The business control system is to be installed on two Digital Equipment Vax minis in Kuwait and Dubai. Systems of this complexity have in the past been run usually on mainframe configurations, said Joice.

Angela Simonsson, Altergo's database expert in Dublin, said the database would probably have more than 70 record types and would run into several hundreds of megabytes.

The use of DEC's database management system on PDP-11 minis is commonplace, but there have been few if any sophisticated uses of the DBMS on the Vax in Europe or the Middle East to date.

A Vax 11/780 will be set up in Kuwait and an 11/750 in Dubai, which will share the database, but will not be linked up.

"We haven't yet decided how data is going to be moved from one to the other," said Simonsson. There is also to be a Vax in UASC's Liverpool branch. Completion of the Kuwait side of the task is planned for this spring and the remainder should be finished later in the year.

More than 60 Altergo staff in Dublin will be engaged on the project.

JOICE... "Sophisticated."

### MERCURY OF THE INTRINSICALLY SAFE WEATHER PROOF TERMINAL

Features

- 80 character liquid crystal alphanumeric display
- 32 character ASCII keypad
- Optional magnetic card reader security system
- Sealed, rugged enclosure for hostile industrial environments. Water-proof, dust-proof to IP65
- Intrinsically safe circuitry allows installation in hazardous areas (flammable vapours)
- Easily interfaced to the serial port of virtually any computer system using 7 bit ASCII coded serial data
- 20m current-loop serial transmission allows cable lengths up to 2km typical
- Optional configurations available

Spectra-Tek MERCURY Series terminals provide a rugged operator interface to a remote computer system. Typical applications are:

- Real time loading terminal applications
- Batch and on-line control
- Industrial process control
- Factory automation and robotics
- Production line efficiency monitoring
- Security systems

**SPECTRA TEK**

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SYSTEK have been supplying Terry Dart, the Data Processing Officer (Administration) at the Imperial College of Science and Technology for four years. During that time he says he has rarely had cause for complaint about their equipment or service.

"Before that we suffered so much from lack of support from our previous supplier, you can't imagine. I have always found SYSTEK to be very helpful and cooperative, making certain that those people who can answer difficult questions are there when you want them. I've found the support I've needed from SYSTEK and on that basis I've recommended them to a number of other people."

Terry explained that the college wanted to make a move so that they could run two machines together, their existing DEC PDP 11/35 and a new PDP 11/54. It appeared that SYSTEK were the only company actually

prepared to sit down and talk to them about it and do the initial work required.

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"If you're in the situation of only having a certain amount of money to spend, like most universities, it is possible to get a good price from someone then find they drop you in it. After my experience with SYSTEK it would be very difficult to think of going elsewhere, because quite simply they provide the kind of service I'm looking for."

"The sign of a good supplier," Terry concluded, "is that you'll go back to them. And I would certainly go back to SYSTEK."

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Hopes of economic upturn are focused on Hanover Fair

# Germany in bid to stimulate IT

by John Riley

EXPORTERS to Germany stand to benefit if top German industrialists succeed in a campaign to stimulate user demand for information technology.

Speaking in London last week, Günter Möller, director general of the European Business Machine Manufacturers' Association and leading member of the German DP industry, pointed out that the German office and data technology industry has not matched the high growth rates of previous years.

He considers that two factors may help to change this trend. Firstly, a clear majority government in the March 6 German General Election would provide economic, political and social direction.

Secondly, a campaign to encourage German home demand that is being focused around this April's Hanover Fair is intended to provide a decisive impulse towards an upturn in the economy generally.

Exports of German office and data technology products rose in the first nine months of 1982 to about £1.3 billion, up 12% on 1981. Imports to Germany of similar products in the same period went up much less than expected, by 1.5% to about £1.25 billion, while home demand slumped by 7% to about £1.6 billion.

Möller thinks that the reluctance to invest in new technology has been caused not by the deteriorating general economic situation in Germany, but by the rapidly improving performance/price ratio of new technology products.

He explained: "Companies still seem to expect further improvements in the price/performance ratio of this new technology, without realising that they run the risk not only of losing their national and international competitiveness, but also the crucial timing element of their entry into the high technology field."

The Hanover Fair is divided into 10 separate trade exhibitions, with over 5,000 exhibitors from 50 countries including 162 British exhibitors. The largest exhibition is Office and Data Technology, with over 1,000 exhibitors from 26 countries, including 32 from the UK, although new technology is represented in the other exhibitions.

A concerted effort is being made by German industrialists to convince German businesses, 95% of which are small or medium-sized, to invest in new technology. If successful, the home market would revive and a likely effect would be an increase in imports in these products.

The German DP industry is making serious efforts to counteract concerted trade union claims that the introduction of the new technology there would be harmful to society.

Möller said the efforts were aimed particularly at young people



MÖLLER... Aims to stimulate German demand.

who, while not hostile to the new technology, were suspicious of it.

A central forum to persuade young people, not by spoken arguments, but by giving them hands-on experience of the new technology, is to be provided at Hanover Fair.

The forum will be staffed by young engineers, who will guide them in, for example, simple CAD/CAM applications, and by neutral medical specialists who

will answer questions on health and safety.

Möller last week rejected claims that new technology has led to unemployment in Germany. He said that while unemployment in German office-related professions had risen from 0.5% in 1980 to 4%, there had, over the same period of time, been a decrease in the sales of word processors, as well as a worsening of the overall unemployment rate to 9%.

The system is based on Wang Office Information System in a general word and data processing facilities with Oliver Budget's Manager software catering for editors' special needs.

Laurence Silman, Anglow managing director, says the financial package is "tailored to the needs of the market," based on Anglow's 20 years' experience.

## Leasing deal draws legal practices into computer age

by Kevan Pearson

SOLICITORS can enter the computer age by just signing on a dotted line and they need not make any payments for six months, thanks to a new tripartite system and financing deal.

The leasing deal, offered by Anglow Leasing, a Rothchild subsidiary, covers both hardware and software tailored to solicitor needs, and it has a provision whereby the lessee can stop payment for up to six months if the deal is not successful.

Anglow Leasing has joined Wang and Wang-based software Oliver Budget to offer the partners describe as a "complete solution" to a solicitor's counting and word processing needs.

The system is based on Wang Office Information System in a general word and data processing facilities with Oliver Budget's Manager software catering for editors' special needs.

Laurence Silman, Anglow managing director, says the financial package is "tailored to the needs of the market," based on Anglow's 20 years' experience.

## UK forum for office automation system users

by John Kavanagh

A FORUM for office automation system users and manufacturers has been formed in the UK as part of the US Office Automation Society, set up last summer.

But the society overlaps in many of its aims with the 500-strong International Information and Word Processing Association, formed in the UK four years ago and now breaking away from its US parent.

The Office Automation Society has 200 members in the US and a similar initial membership in the UK, with the aim of 1,000 members by July. It is headed in the UK by Don Tombs, who spent 12 years with Philips, latterly as office automation products manager. He now runs a consultancy specialising in video disc systems, Videodisc Technology.

"People can only get information by going to expensive conferences or buying reports," Tombs said. "With these sources people don't necessarily get what they want but rather what the supplier wants to tell them."

The society's main aim is to promote professionalism in the use of office automation.

## 'General packages no longer viable' Trend is to trade specialisation

by George Black

THE growth of vertical markets - trade-specialised systems - is the most significant development in computing services over the past year, according to Doug Eyelons, director-general of the Computing Services Association.

He was commenting on the European Computing Services Association's annual market survey. "People are learning that it is no longer viable to offer general packages such as payroll systems. They have to concentrate on one area, like car dealers or hoteliers," he said.

The ECSA survey shows that software services is the fastest growing segment of the field, with user spending of \$2.73 billion in 1981 likely to grow by 15.5% each year up to 1986.

The biggest European software market is France, with a 22%

share, followed by the UK and West Germany. But the growth in employment in the industry slowed to only 4.2% last year. It was 13% in 1979. The most profitable countries for computing services were the Netherlands, Switzerland and Portugal.

Though Britain and the US saw a number of significant mergers during 1982, the Continent had far fewer than in previous years. And the pattern of distribution has changed, with hardware makers going into second sources, such as retail chains, in search of greater market coverage.

ESCA predicts a dim future for public databases, but thinks proprietary database services for industry will prosper.

"Sixth Annual Survey of the Computing Services Industry", prepared by Quantum Science Corporation for the European Computing Services Association, 734 High Holborn, London WC1V 6LE, price £140 (members), £250 (others).



EYEYONS... "No longer viable to offer general packages".

## BT orders first under-sea optical fibre cable

by John Kavanagh

FIRST optical fibre cable to go under the sea around the UK has been ordered by British Telecom to link Portsmouth and Ryde on the Isle of Wight. The £600,000 15-mile cable will be supplied by STC.

The installation of the cable, due to enter service in 1985, is part of BT's £280 million a year plan to provide digital communications services throughout the UK. Almost 1,900 miles of cable worth £40 million have been ordered from UK firms.

The cable will use monomode, or single-wave, transmission, which will enable the light pulses carrying the communications traffic to travel the 15 miles without being amplified on the way.

With the more bulky multimode optical fibre systems the light signals have to be regenerated every five miles, and expensive business involving amplifiers buried in the ground or under the sea.

With analogue coaxial cables amplifiers are needed every two miles. In addition, coaxial cables are 10 times the size of optical fibre cables.

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# Rumanian computer spy jailed by French

by Jack Gee

A FRENCH court has jailed a Rumanian research specialist in computer technology for two years after finding him guilty of passing on information about France's data processing know-how to the Communist government in Bucharest.

Traian Muntean, 33, was sentenced by an Assize Court in Paris after being arrested by the French counter espionage service in 1979.

The Rumanian had been working as a research scientist in France since 1973 and had been teaching information technology at Grenoble University.

He denied charges of "intelligence with a foreign power damaging to France's interests" and claimed that he had never delivered information to the Rumanian authorities which could have harmed France.

Muntean told the court, "I was interested mainly in theoretical research, not in its practical applications. I was working mainly on

parallel language."

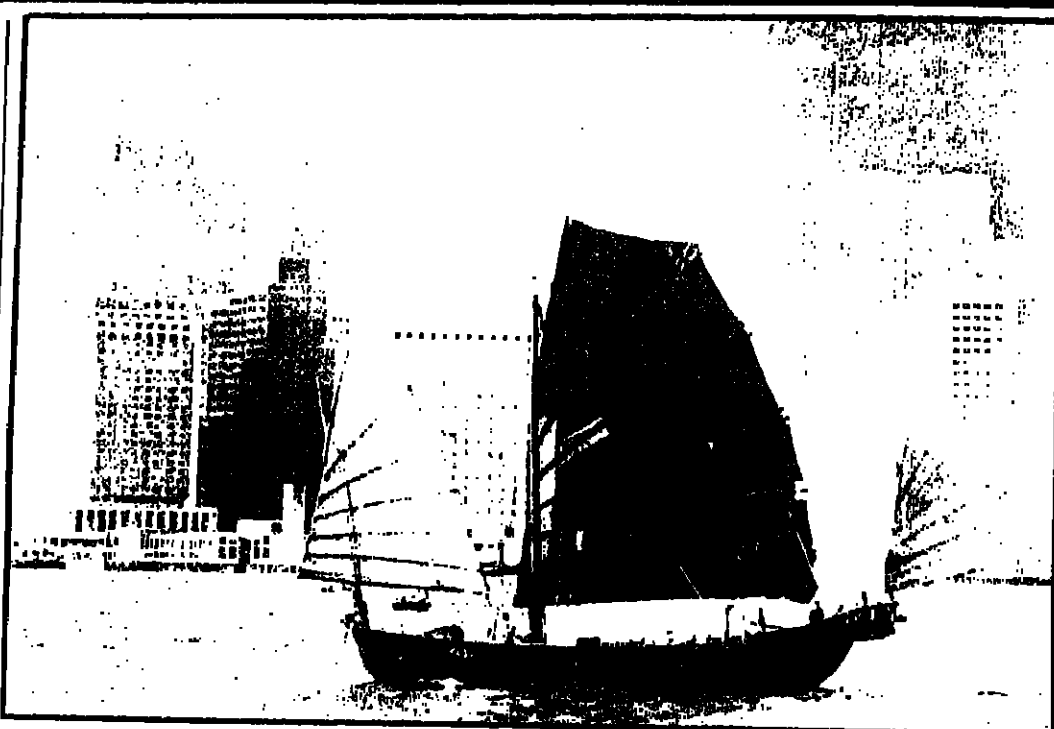
Demanding a five-year prison term, public prosecutor Gabriel Dupin de Beysan said, "The nation must defend itself against any espionage or intelligence operation."

Muntean's lawyer, Maître Henri Leclerc, said Muntean did not betray his adoptive country. "He was blackmailed by Rumanian secret service men."

The prosecution said the Rumanian computer expert made frequent visits to Eastern Europe to deliver scientific information.

Muntean replied, "These were not confidential papers. When I went on trips from France to Britain to study work there on computer technology, I sent regular reports to my laboratory at Grenoble University. This was not spying. My contacts in Rumania were not espionage agents either, but university professors."

He claimed that he used a secret code for identifying himself to his Rumanian contacts.



ExportIT is sponsoring UK stands at the Computer 83 show in Hong Kong.

## Cut-price entry to Far East

by John Riley

CUT-PRICE opportunities are being offered to UK information technology industries which want to exhibit their products in the US and the Far East this spring.

The UK Information Technology Export Organisation, ExportIT, in conjunction with the British Overseas Trade Board, is sponsoring UK stands at Comdex Spring '83 in Atlanta, Georgia, the Computer '83 exhibition in Hong Kong in June, and the Computer Exhibition in Singapore during May.

An all-in package including airfare and accommodation for two people and stand space, on a first-

come, first-served basis, is £2,800 plus VAT for the US show, and £2,750 plus VAT for each of the Far East shows (cost to non-ExportIT members is slightly higher). The cut-off date for the Comdex trip is in the next few days.

ExportIT points out that while the number of computer installations in Hong Kong is increasing at about 50% annually, the UK's share of the market is only 4%. In addition, software there is considered to be five years behind the US and UK.

The market is growing in Singapore. Figures for 1982, when Singapore's computerisation pro-

gramme began to gather pace, are not yet available. In 1981 the value of imports of office and data machines totalled about £173 million, with the UK's share at £8.1 million, in third place after the US and Japan, according to the Annual Statement of the Singapore Department of Statistics.

In addition to the US, Hong Kong and Singapore shows, ExportIT is also offering similar £3,000 packages to the tenth Australian Computer Exhibition in Melbourne this September, and to the third Gulf Exhibition in Dubai.

Enquiries to exhibitions manager, ExportIT, tel: 01-236 27415.

## Microsystems 83 to merge with new computer trade exhibition

THE Microsystems 83 exhibition scheduled to take place in London next month has been merged with Computer Weekly's new Computer Trade Show, to be held on April 26-28 at the Wembley Exhibition and Conference Centre.

Microsystems attracts system designers, engineers and those who are looking for boards, components and peripherals to incorporate into industrial systems based on microcomputers. The Computer Trade Show will attract more of the visitors as part of a much wider audience of systems houses, OLS buyers, dealers and distributors.

Also backed by Computer Weekly's sister journals *System*, *International* and *Practical Computing*, the Trade Show is restricted to visitors from third party vendors - the so-called independent sales organisations. These are the companies which then sell to users.

More details on the Computer Trade Show 83 are available from exhibition manager John G. IPC Exhibitions, Surrey House, Thorowley Way, Sutton, Surrey SM1 4QQ. Tel: 01-643 8040.

## Welsh backers

A PIONEERING Welsh computer company has drawn £400,000 investment from the venture capital subsidiary of the Welsh Development Agency, Hefin Investment Finance. Called Compus Practice, the company helps pioneer new management techniques for television stations. It also modifies software and hardware for small business systems, and designs equipment for engineers to design components on a computer linked to machine tools that produce them.

ICL has been under pressure from smaller authorities for a housing package for the ME29. Work has been progressing on HMIS, Housing Management Information System, for the 2900 series mainframes with a consor-

## Smaller loss

ITALY's major telecommunications supplier, Italtel, has turned a 120 billion lire loss for the year, less than half the loss made in 1981. The State-owned company blamed high interest charges for the loss, but has increased turnover by 32% to 930 billion lire.

## Mitel profits

FAST-GROWING telecommunications equipment maker Mitel has reported profits of \$17.6 million on turnover of \$155 million in the nine months ended November 1982. This is slightly up on the same period in 1981.

## Park tenant

WARWICK University's new science park looks set to draw £13 million investment from high technology companies in addition to the £1 million already provided by Barclays Bank for the first building. Biggest potential tenant is Computervision, a leading US maker of computer aided design equipment, which says it would like to build another £1 million factory on the site.

## Mitsubishi slump

PROFITS slumped at Japanese electronics plant Mitsubishi in the half-year ended September 1982. Earnings were down 26.5% on the same period of 1981, from \$80 million to \$59.4 million. The setback was caused by the cost of acquisitions and depreciation in the year.

## Decline at DG

THE decline at Data General accelerated in the quarter ending at Christmas with a 79% fall in profits on the same spot in 1981. Earnings were a mere \$3.1 million, or 27 cents a share, compared with \$14.9 million, or \$1.40 a share, a year earlier. The slump was due to a

# ICL gains from 'lost' deadlines

by John Kavanagh

A GROUP of ICL users have let down the company over the development of a local government housing package. But the failure of the users to meet deadlines could be a blessing in disguise for ICL.

While ICL now has been forced to buy in a system from Leasco Software, the deal could give ICL a foothold at local authorities which are using other manufacturers' equipment. Leasco is to concentrate on selling the package, which runs as a dedicated system on ME29 computers, to non-ICL sites.

The only snag to the deal could be ICL's ill-fated Dilis system for handling local authorities' direct labour forces. Dilis is to replace the direct labour module in Leasco's package - but Leasco says it will not take on Dilis until users are happy with it.

The Leasco package, Lohmasc, handles housing administration, including accounting, repairs and maintenance and lettings. The company has sold seven systems, mainly on Digital Equipment minicomputers, although the last order involved a newly-converted ME29 version.

ICL has been under pressure from smaller authorities for a housing package for the ME29. Work has been progressing on HMIS, Housing Management Information System, for the 2900 series mainframes with a consor-

tium of local authorities. The system, when ready, was to be adapted for the ME29.

Each authority in the consortium is designing and programming one module of the package, while ICL is managing the project and producing the control module.

"Some of these authorities have let down ICL badly," said a senior officer of the ICL users' association. "They have consistently missed deadlines and the system won't appear before 1985 at the earliest - two years late."

ICL, it appears, cannot win. It is working with users on HMIS and things have gone wrong. Yet it has been criticised by users for going it alone on the Dilis package for direct labour.

Gordon Crawford, local government manager at Leasco, said the ICL deal could be "extremely significant" for his company. "It extends our market potential quite dramatically," he said.

Crawford added that Leasco would treat Dilis "with caution". "Before we take on an existing Dilis customer we will want to know he is satisfied with it," he said. "The timescale for our taking responsibility for Dilis is not fixed yet."

The users' association spokesman said the committee was checking the Lohmasc package. "What we've seen has been satisfactory, but we are asking for more details," he said.

## Versatile terminal launch

by Andrew Thomas

A NEW British VDU could signal the end of the single-purpose terminal. Milton Keynes-based Pericom has developed the technique of multi-host communication, enabling its 7800 range to be connected to a number of different computers without modification.

While the concept of emulation of other manufacturers' terminals is not new, the Pericom system involves the use of software emulators stored within the device and selected by software commands. By this technique the 7800 can communicate both synchronously and asynchronously, act as a Prestel terminal, perform high-resolution graphics (1024 x 1024 pixels), and be used as a 'standalone' microprocessor.

At a demonstration in London, a Pericom 7800, costing £2,500, was shown taking the place of hardware from DEC, Honeywell, Hewlett-Packard, TEK and others, the combined value of which was eight times the purchase price of the Pericom.

## Iris chairman resigns

by George Black

CHAIRMAN of the executive board of Iris, the international computerised news service, has resigned at a shareholders' meeting.

Prospective investors in the agency, which aims to bring real time information from around the world to governments and corporations, are now demanding a thorough investigation of the management's plans and the launch date has been put back to March. Gustav Douglas, the resigning chairman, gave no reason for his



Cragg... 3,500 installed.

Research and development director Dave Wilkinson explained that despite the 7800's versatility, it is initially aimed at one specific product, with its full potential to be revealed later.

"The basic 7800 starts at around £1,500," he said. Managing director Ron Cragg claims that the success of the 7800 range in its first year of production - 3,500 have been installed - will account for a major portion of Pericom's growth this year.

Figures for the half year ended September show a profit of £600,000 compared with £400,000 for the complete previous year. "This is a complete executive workstation," said Cragg.

# Simulation 'saves animals lives in medical research'

by John Riley

COMPUTER simulation of body systems is saving the lives of cats and frogs, a medical symposium was told.

The symposium at St Bartholomew's Hospital, London, discussed and demonstrated computer simulation techniques in medical training, as well as the practical uses and results of computer aided learning. The simulations included the cardiovascular system and the respiratory system.

Each of the models has a wide range of variables with values based on an extensive number of real life data. Through simulation, the effects of changes of one part of a bodily system can be seen and quantified on other parts of the system, and allow medical students to make mistakes without endangering patients.

One example of cardiovascular simulation was presented by Joseph Lamb, professor of physiology at the University of St Andrews.

He explained: "The circulation is like a plumbing system - if you change one variable, it affects everything else. When the blood pressure rises it affects the central nervous system, the veins, capillaries, adrenalin levels, etc."

He pointed out that "Computer simulation saves us having to use cats and frogs to demonstrate these things."

Professor John Dickenson, of St Bartholomew's Medical College, said: "The use of animals is essential for research, but for understanding systems, simulation is justified. I find it slightly distasteful to use animals if you can do it another way."

Geoff Perkins, chief training officer of the National Health Service, found it "refreshing to see such a high degree of innovation going on, with people almost prepared to scrub their toes and experiment. This shows that ideas are not set in concrete and that this is the way ahead."



Lamb... "Saves us having to use cats and frogs."

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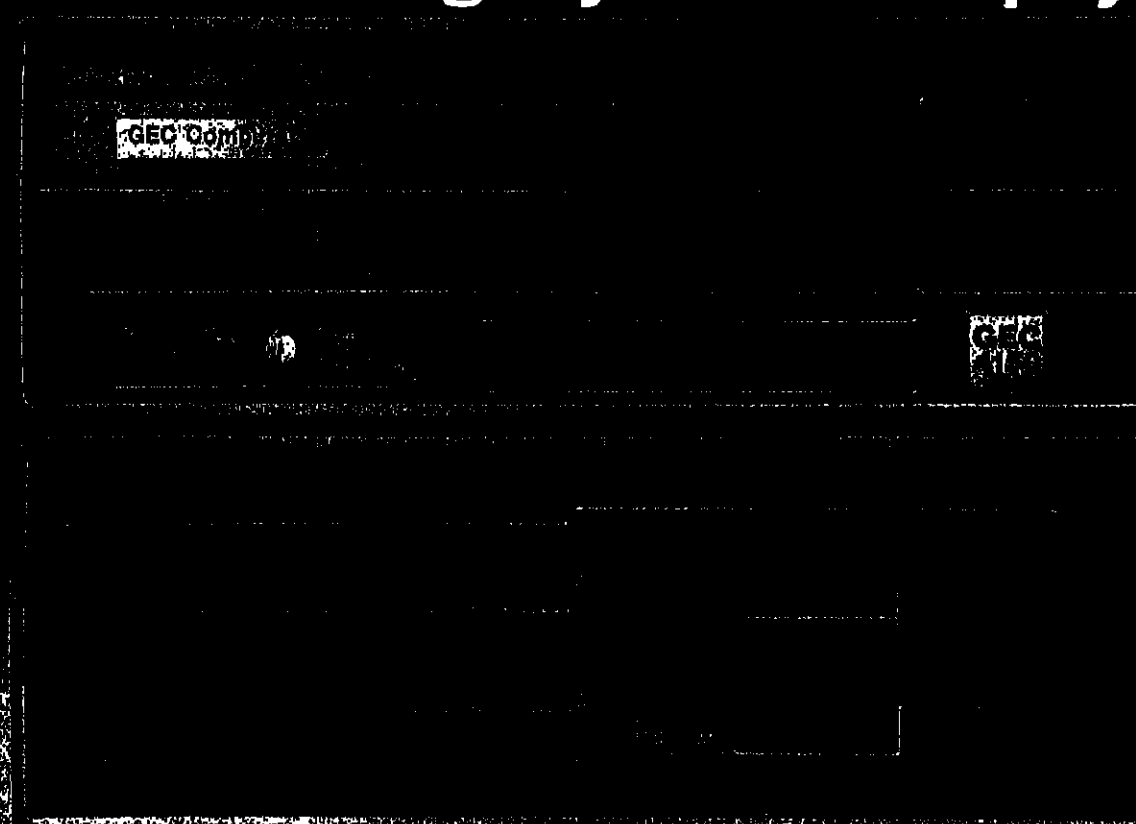
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DRBYFUS... Welcomed the industrial group's experience.

## Industrial group buys 27.5% of CAP Gemini

A RESTRUCTURING of France's leading software house, CAP Gemini Sogefi, is underway with the purchase by Compagnie Générale d'Industrie et de Participations (CGIP) of a 27.5% stake.

CGIP, a holding group whose activities range over special steel, cement, fertilisers, machinery, packaging and railway equipment in France and abroad, made a turnover of FF10 billion last year.

Philippe Dreyfus, CAP Gemini's vice-president, said: "The CGIP we have a shareholder combining the qualities of a financial investor and an industrial group's experience in sectors where robot technology and computer aided design and manufacture promise to play an increasing role."

CGIP has moved in on CAP Gemini, whose management will be

## Inmos delay

■ From front page

funding Inmos has received and to say whether he has formally notified the British Technology Group - successor to the National Enterprise Board - that no more public money is to be made available to Inmos.

Inmos is currently pleading with the government for more cash, and the latest round of discussions on the company's future have entered their fifth week.

According to a spokesman for the BTG which is backing Inmos, no agreement on further investment had been reached at the beginning of this week. Inmos' request for £15 million has forced the government to reverse its "No more money for Inmos" policy, announced by Jenkin in October last year.

Jenkin's statement was widely interpreted as a move to block a request by the Inmos management for a further £10 million to carry out research

## Six-month delay irks Jacquard users

by George Black

TEN months after the takeover of Jacquard, the word processor makers, by ATV, production is still not flowing smoothly, their users have alleged.

London-based Business International has been waiting since July for delivery of 1100 equipment. "Now we have been told we shall get it by the end of the month, but I don't have much confidence," said BT's Angela Cassidy. "We are expecting a multi-device adaptor and more screens for our word processor and a Sila-2 communications board, so we shall be able to communicate with our Geneva office. The delays have put back our production and cost a lot of time and effort."

The \$100 million company Applied Technology Ventures of Santa Anna, California, bought Jacquard from AM International

early last year. It soon ran into problems because AM International was continuing to make some of the hardware.

ATV made the J300 itself and had no trouble with getting J500s from AMI, but the top-of-the-range J100 hit considerable difficulties.

Gordon Skinner, of MBS in High Wycombe, a large Jacquard distributor, said there had been delays of several months.

A spokesman for ATV in California admitted, "We've had our share of hiccups, but are confident they will be overcome next month when we take over production at our own plant."

They were also planning to set up an assembly operation for the J500 in Ireland, under the title of Computer Corporation Europe (CCE).

## European office systems market 'explosion' forecast

by George Black

A SOFTWARE explosion towards the end of the decade will create a European office systems market of \$19.5 billion, according to US business analysts Frost and Sullivan.

The European market in 1982 was worth \$1.2 billion. Fastest growth is predicted for West Germany, with software expenditure of \$6.10 billion by 1990, compared to UK's projected spending of \$4.68 billion and France's \$4.41 billion.

Frost & Sullivan's report sees software costs increasingly predominate over hardware costs through the 1980s. Terminals will show the most dramatic growth, from \$135,000 sold in Europe in 1982 to 1.4 million in 1990. Other

networks and computerised PABXs, from \$30 million of revenue last year to about \$110 million in 1990.

The growth of the market is being spurred by the fact that office costs - labour and rents - are going up faster than inflation in general, it is argued.

Although the relative positions of West Germany, Britain and France are not expected to alter, much will depend on the comparative levels of government support and the state of the national economies, say the analysts. A significant factor will be the privatisation of British Telecom, while West German and Swedish communications markets remain PTT-dominated.

Dr. J. J. Sullivan, President of Frost & Sullivan, said: "The European market will be a very important one for software companies."



# IBM sets out its Personal policy



KILDALL... "Quarter of IBM cost".



HEWITT... "Easy as Basic but more powerful".

by George Black  
IBM has followed the tack it set in the US in formulating a software strategy for the UK launch of its Personal Computer.

A software publishing department has been set up within the company to cater for independent software companies and individuals, and a number of established software suppliers have been named to supply packages for business and home uses. Micro Focus, Digital Research, Peachtree, VisiCorp and Microsoft lead the list.

Finance and budgeting will be handled through VisiCalc and Multiplan, the successful spreadsheets owned by VisiCorp and Microsoft.

As in the States, the advanced disc operating system from Microsoft will be used to support PC programming, which IBM says will allow easy transfer to the PC of a whole range of popular applications.

Text processing and storage can be carried out by EasyWriter, an Information Unlimited package.

Digital Research, in an aggressive move, is to market a £42 version of the CP/M-86 operating system. In the US, the O/S, which has a million users worldwide, was available for the PC only through IBM. Digital Research president Gary Kildall says the company's own version has several enhancements and is one-quarter the cost of IBM's own.

Digital Research is also to produce a LOGO interpreter - a sort of housekeeper for program developers. Called Dr LOGO, it will come out in April. Kildall said it was designed for the first-time user as well as for experienced programmers to develop complex programs.

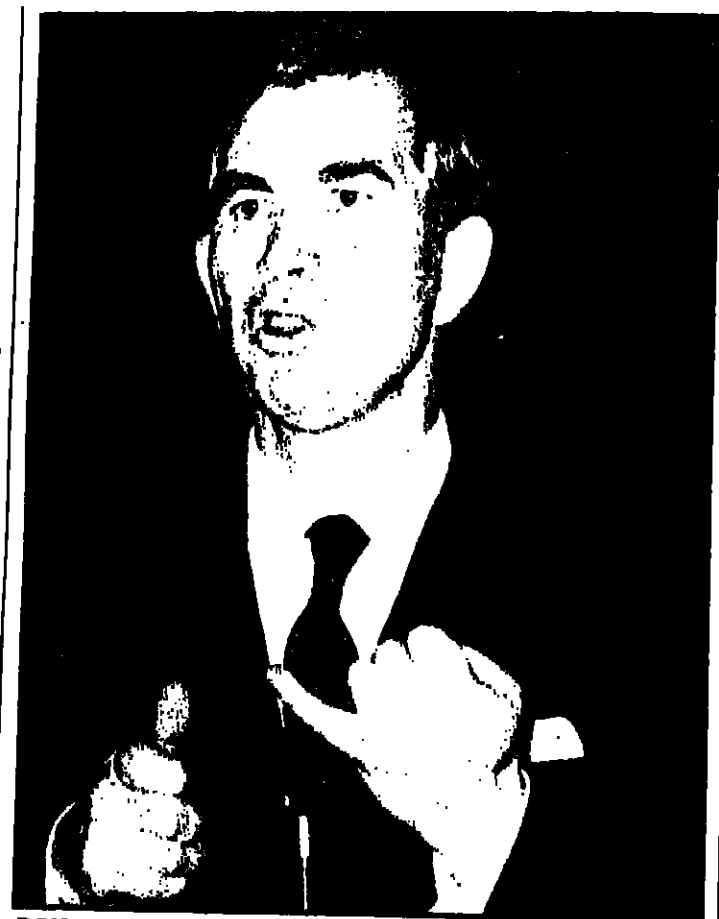
Micro Focus is to supply its Level 11 Cobol compiler and runtime system for the PC running under the PC DOS operating system. It will complement its new Personal Cobol language, an integrated software environment for building "mainframe-level" Cobol programs.

Micro Focus' Peter Hewitt claims the package is as easy to use as Basic but many times more powerful.

Personal Cobol is based on Micro Focus' Level 11, the only Cobol for micros certified by the US government at the same level as mainframe Cobol compilers.

Peachtree Software, now a subsidiary of MSA, Management Science America, has announced that, as in the US, its accounting packages will be on the PC as well as its spelling proof reader, list manager, PeachCalc financial modelling tool and its colour graphics.

Later Peachtree is to add its Business Management Systems written in Micro Focus Cobol. The PBMS programs await announcement of greater disc space on the PC.



DONALDSON... "Room for a more powerful system".

## Banking system 'upstages' Midas

by George Black  
A NEWLY-FORMED subsidiary of merchant bankers Hill Samuel is to promote an internally developed banking system for DEC PDP-11s which they say upstages Midas.

The company is to be called Business House Systems, and its first brainchild is the House system. The designer was Archie Reid, who devised Midas, the banking system from BIS, which became the field leader in the late Sixties and Seventies.

Midas originally was designed for a System 32 IBM minicomputer, and handles small banks' accounts outstandingly well. It has since been expanded to run on the System 34 and 38.

Business House Systems' chairman, Hamish Donaldson, claims that the growth of transaction processing and management information in the past decade has created room for a more powerful system.

"House is intended to handle up to 1,000 deals a day, a figure which we are regularly achieving two days a week now. The other main feature of House is that you can use the same software for all machines, from the 11/23 up to the 11/70. This means it will be useful to any bank that handles more than 50 deals a day." BIS expects the latest versions of Midas to match the claims of House.

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## Nursing home admin system

A SOFTWARE package for nursing home administration is soon to be marketed by a new computer firm. It has been developed by Brian Jupp, a nurse home owner in Worthing, a computer salesman Neil Black. Their company, PSI Computers, is in talks with four manufacturers for rights to the system, called Hemed.

It has been developed on the Hoffman Roche micro, the Ixtron PSI-80.

"Two and a half years ago we were looking for a computer system to run our home, which is 60 staff," said Jupp. "We found there just wasn't one, so I set about writing it myself."

## Pay package

A PAYROLL package for use with the Unix operating system has been produced by Root Computers of London. CPAY, written in the C language, can handle payrolls of up to 10,000 employees on DEC's PDP-11 range and Unix System 11.1. Including provisions for the new Statutory Sick Pay scheme coming in this April, it will cost £950 for implementation on the 11/23.

## Show launch

AN insurance brokers' package, Philips new P3500 micro, is launched at the Which Computer show in Birmingham. Written by Humac Software Services of Rufford, Essex, it is the outcome of collaboration with experts in the field and recommendations from the British Insurance Brokers' Association. The first turnkey system on the P3500 to be introduced by Philips, it will cost from £3,700 to £12,900.

## Monitor

A COST and efficiency system for IBM users is being marketed by Californian company. Running under VS with VSAM and TSO, CICS/VS, the California Software Company's Netman monitors all a firm's computing operations.

## Dublin development centre for IBM

IBM, attracted by tax concessions and government grants, is setting up a software development centre in Dublin. It will start life in the corporation's Dublin offices, but IBM will build new premises for the operation as soon as a site is chosen.

Recruitment will begin this spring, and the centre is expected to take on 50 staff by the end of next year.

Mike Kos, managing director of IBM Ireland, said he was confident he would be able to employ mostly Irish staff. Many of them will be new graduates.

The software developed in Ireland will be exported to IBM's companies around the world. It will consist mainly of administrative and control systems for IBM's own equipment. The Dublin operation will be the third such

centre; the others are in Portsmouth and Uithorn, Holland.

As an international service the project qualifies for corporation tax at 10% instead of 50%. Under the Irish Industrial Development Authority's grant policy, software counts as manufacturing industry for this purpose. And the firm can also claim grants of up to 50% on its fixed capital investment as well as up to £127,000 per employee.

The announcement of the scheme was made last week by Ireland's Industry and Energy Minister, John Bruton.

IBM already has other Irish branches at Cork and Limerick and three customer engineering centres elsewhere in the country. IBM Ireland's revenue in 1981 was £121.6 million.

## Mainframe power for VisiCalc

LONDON software house APL\* Plus has brought in a mainframe package compatible with VisiCalc, the most popular micro financial spreadsheet system.

Called ExecuCalc, it is intended to enable VisiCalc users to benefit from the power of an IBM mainframe.

ExecuCalc is designed to allow processing of larger spreadsheets and multi-user applications through standard IBM file-sharing software.

Managing director Barrie Webster said executives who might be reluctant to adopt the do-it-yourself approach of a micro would appreciate the power of ExecuCalc supported from their central data processing department.

The licence fee will be £3,000.

## MICRO NEWS

# Apple puts its future on the line with Lisa

APPLE last week firmly nailed its flag to a new mast. With Lisa it is setting out into uncharted territory - for Apple at least - and attempting to awaken the microcomputer in the large office environment.

"We are looking to be some-



JOBS... The beard has gone. Will Apple follow if Lisa fails?

where way out on our own in the personal office system marketplace," says Brian Reynolds, product manager for Lisa in the UK. "Lisa is a new concept, much more than just a 16-bit high capacity Apple III."

The key to Apple's approach with Lisa, which is said to stand for Locally Integrated Software Architecture, is the application software embedded in the machine's huge operating system. Six business applications cover financial modelling, list management and project scheduling, as well as the word processing and graphics facilities which seem to be essential parts of any office-oriented system these days.

It is not just these applications by themselves that make Lisa special. It is the way they work together and the means of getting at them that really count.

Information can be passed around the system as easily as pointing. Data from the spreadsheet can be moved into reports produced by the word processing application, transformed into graphs or charts, filed away for safe keeping or thrown in a "waste bin", all by using the mouse to move the pointer around the screen. The whole approach is one designed to keep things as

simple as possible for the non-typing office worker to use.

Particular items are presented as "papers" stored in "folders", and graphically represented as such on the screen. All the user has to do is position the pointer over the selected item on the screen, by moving the mouse around on its ball bearing, and press the button on the mouse once or twice. It is all supposed to mirror the way a business worker shuffles files and pieces of paper around a desk.

Even the floppy disc units have been redesigned for user-friendliness. The drives have no doors, and all the user has to do is push a disc in. Discs cannot be removed in mid-flow - only when removal will not lose data.

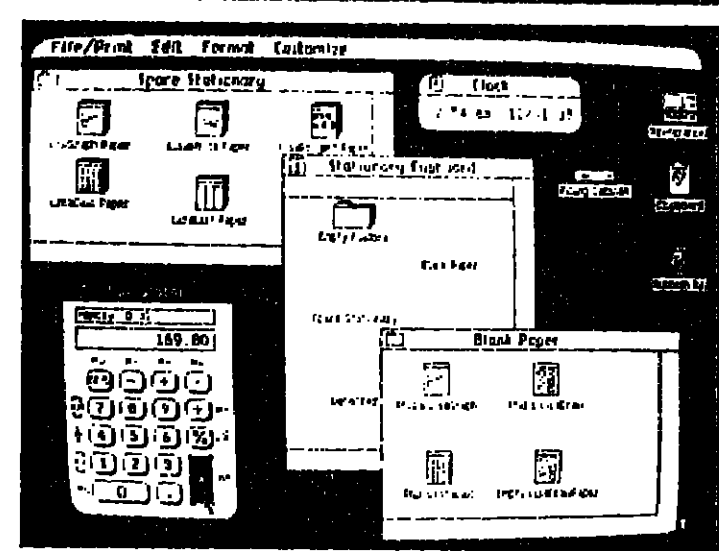
The idea is essentially the same as that used by VisiCorp with its VisiOn product. This, too, is an operating environment pulling to-

gether previously separate applications programs for word processing, spreadsheet analysis, graphics and so on, but is not attached to any particular machine.

It will appear first on the IBM Personal Computer, followed closely by the DEC Professional microcomputers, and a mouse - with two buttons this time - is the only additional hardware.

Both Apple and VisiCorp are convinced that this route into large volume office customers will work. Apple, at least, has to be. It has invested so much in Lisa, and the different versions of the basic concept that are bound to appear in the not too distant future, that it cannot afford to get it wrong.

As Apple founder Steve Jobs notes, Apple only had \$1,500 to lose if the Apple II did not take off after its launch. This time, if Lisa fails, Apple stands to lose the lot. Lisa is expensive, coming in at



The Lisa view of a desktop on your desktop.

around £8,000 when it appears in the summer. This is a lot, even allowing for the hard disc and printer included in the basic system. A new approach to selling the system will be needed and Apple envisages a network of between 50 and 100 dealers in the UK to handle Lisa. They will not necessarily all come from Apple's existing dealers. There will be no direct sales by Apple. The system does not run particularly fast, despite the proliferation of microprocessors, and any further application packages from third parties will need tailoring to fit the made-to-measure suit Lisa wears. A tool kit to allow software developers to integrate with Lisa's features is promised for launch time here, and Digital Research is working at taking CPM on to the machine. The first language available to software developers on Lisa will be Pascal, followed by a Basic akin to DEC Basic and Cobol from Micro Focus.

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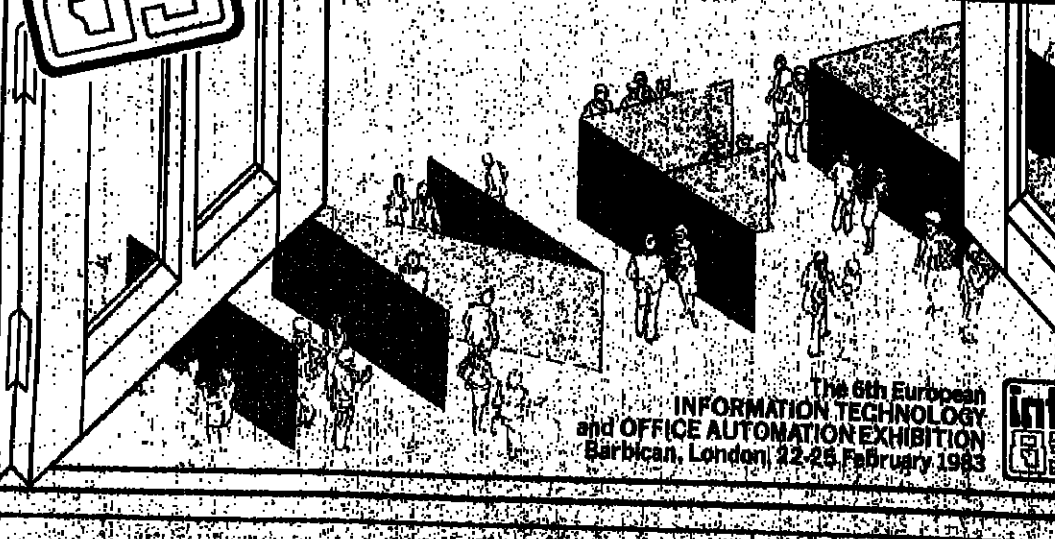
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HARRISON... £800 million turnover target missed.

## Racal shares slide 62p on profits shortfall

WHAT kind of year is it when Racal topped profits up by only 22% to £46.9 million?

It is the third year of the worst recession since the Thirties, according to Sir Ernest Harrison, Racal's blunt chairman.

One measure of how bad it is, said Sir Ernest, was a stall on £65 million worth of electronics goods already ordered and originally due for shipment in 1982. This left the company facing a miss on its ambitious target of £800 million in turnover for the year.

Sir Ernest made no mention of the likely effect on a specific profit projection, but the chairman's gloom, combined with the ambitious expectations of the City that Racal would make it to £50 million for the first half, was enough to knock 62p off the shares.

Which all seemed something of an over-reaction to the 18.3% rise

in turnover which Sir Ernest revealed.

Turnover for the Racal group as a whole rose to £359 million, compared with £303.5 million for the first half of 1981/82.

The company, which had tax liabilities for the first half of £18 million, was a net exporter of £330 million worth of defence and other electronics goods for the year.

In addition, overseas subsidiaries of Racal, chiefly the two subsidiaries in the US, Racal Milgo and Racal Vadic, sold £220 million of product. It was clear, however, from Sir Ernest's comments, that in the data communications area, which accounts for fully 29% of Racal's business, the company was facing a tough market.

Price competition in the modern field was particularly strong, and the chairman said there had been pressure on margins.

Racal last year supplied over 325,000 modems in the US, where the business is still booming in volume terms.

In an effort to diversify further in the States and reduce dependence on the modem business, Racal recently bought Magpulse, the Bedfordshire, Massachusetts-based radio and navigation equipment company.

The purchase coincided with Racal settling a year-old legal wrangle with Philips in Holland over payments for the use and maintenance of Decca navigation services as aids to navigation.

Racal has a number of interests in the computer industry. The most important of these, Racal Redac, which produces computer aided design and manufacturing equipment, had a bad year according to Sir Ernest.

He said the expected boom in

CAD/CAM had simply occurred and pointed to QinetiQ, an example of the situation in the industry.

Racal recently broke off a aimed at linking QinetiQ, QinetiQ and Racal Redac into a single CAD/CAM supplier.

Although Racal appears committed to the idea of CAD/CAM there were no hints as to what Sir Ernest thought the situation would improve.

Despite all the gloom, however, Racal's cash position continued to improve and Sir Ernest noted that the company would be a net nil-borrowed situation by the end of the year.

Stockbrokers seemed to take a sanguine view, despite the slide.

More than 350 representatives of the financial institutions were up to hear Sir Ernest.

## Private placing the only way out for Inmos

WHAT price a company which has cost every man, woman and child in the UK £2.50?

This is the question the British Technology Group, under government pressure, is putting to financial institutions in the City later this week.

Both BTG and the government see a private placing of shares in Inmos as the only exit now available from the dilemma facing the company as it gears up for volume production in Colorado and starts production of 16K RAMs and 64K RAMs in Wales.

The dilemma facing Inmos is twofold - on the one hand cash, on the other confidence.

As production rises, so does the need for cash. Even with the BTG's recent additional funding of £15 million Inmos has nothing like the kind of liquidity it needs to compete internationally in the memory chip market.

Sir Frederick Wood estimated that Inmos would need £50 million to go international with volume production.

The City, which last year rejected a bid by the BTG to get private funding for Inmos, came up with a figure of £40 million.

Either way, the sum involved is large, and last year the financiers saw no profitable justification for investing that kind of money in Inmos.

The British Technology Group, which owns 72% of Inmos, says the Colorado Springs plant will be profitable this year, and the factory in Wales will be in the black by early 1984.

According to the City men, early needs to be "very early" and it is unlikely the BTG will fare any better this time round unless the Group is prepared to guarantee the profit projections contained in the prospectus being sent to the financial institutions.

This the BTG should be able to do if the Group's confidence in Inmos is as strong as the certainty with which the BTG has been saying that Inmos met all its 1982 targets.

Neither Inmos nor the BTG will say what those targets were but overall the company shipped £14 million worth of product, principally 16K DRAM chips in 1982. How much came from Wales, and how much from Colorado Springs, has not been revealed.

By the end of 1983 Inmos

should have delivered volume 64K DRAMs, from both Newport and the US, and turnover should have at least doubled.

But so will costs and the need for financing inventories, deliveries and production.

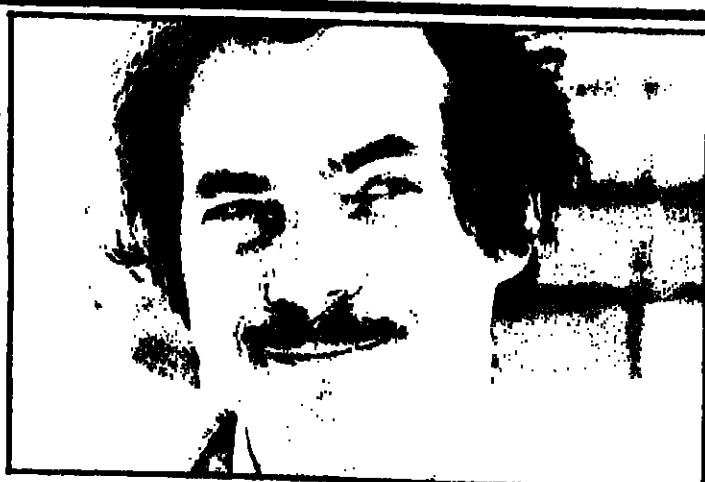
The BTG statement about profitable trading operations must also be seen in the light of any borrowings Inmos will need to raise, in addition to the existing loans.

It is unlikely that the company will be able to service loans and make an overall profit as well.

The second dilemma facing Inmos, is credibility. The departure of Paul Schroeder, one of the founders, and the controversy surrounding the volume of funds already given to Inmos, not to mention the failure either by the company or its backers to explain clearly why the recent £15 million was needed, have all taken their toll on confidence.

More damaging, despite the company's fair protestations of political interference, was the failure to meet the original volume and production targets set for Inmos.

Leader Comment - Page 15



OSBORNE... Set to join ranks of the very rich.

## First sales of Osborne stock

IN JUST over two months' time, Adam Osborne should be a very rich man. Osborne, the expatriate Briton turned computer entrepreneur, will be making the first sales of stock in the company he founded just two years ago.

The move, which Osborne suggests is to raise more cash as he begins to develop the company away from the single product which has made its fortune, is right on schedule in terms of California venture capital operations.

The company was initially financed by a mix of funds, some from Osborne himself and some from traditional venture capital sources in California.

The bulk of shares in the company are still reckoned to belong to Osborne. The Wall Street Journal suggested last week that the Osborne stock would be the hottest thing to hit the US market since Apple went public two years ago.

Osborne has not revealed details of the stock sale, but has indicated that the company will shortly be adding new products.

So far Osborne sells just one product, a 28lb portable Z80-based microcomputer which comes complete with software. The package has sold spectacularly.

The first of the new products will be a cheaper, more compact version of the Osborne 1. One feature suggested for the new machine is a bigger screen.

The current 31in square display has always been considered one of the machine's drawbacks, despite the fact that the main reason for competition, in the form of Apple, still uses linear displays which are even smaller than Osborne's.

## Turnover at PPL up 54%

by George Black  
LONDON software house Pange Programs pushed its turnover up to £2.75 million last year, a record 54% increase. The record doubled to just over £500k with major orders from the Xerox for Kenya, Singapore, New Zealand and from Saba Berger for France, Singapore and Nigeria.

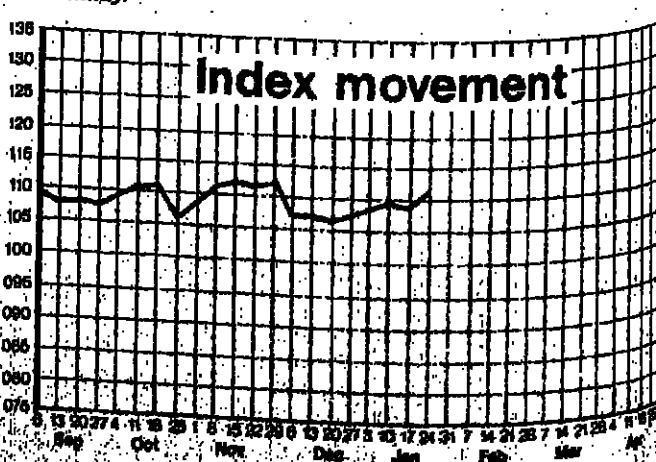
New PPL is looking for worldwide agents for its Accu control and evaluation system. US agent is to be appointed as

## SHARES TABLE

The shares table, which is specially compiled for Computer Weekly, shows selected computer companies that reflect the state of the computer industry.

Date 2/1/83		Index 112.00		Drops	
Price	Change	Price	Change	Price	Change
1982		1982		1982	
High	Low	High	Low	High	Low
212	178	212	178	212	178
180	150	180	150	180	150
170	140	170	140	170	140
134	124	134	124	134	124
120	110	120	110	120	110
100	90	100	90	100	90
80	70	80	70	80	70
60	50	60	50	60	50
40	30	40	30	40	30
20	10	20	10	20	10
10	0	10	0	10	0
0	-10	0	-10	0	-10
-10	-20	-10	-20	-10	-20
-20	-30	-20	-30	-20	-30
-30	-40	-30	-40	-30	-40
-40	-50	-40	-50	-40	-50
-50	-60	-50	-60	-50	-60
-60	-70	-60	-70	-60	-70
-70	-80	-70	-80	-70	-80
-80	-90	-80	-90	-80	-90
-90	-100	-90	-100	-90	-100
-100	-110	-100	-110	-100	-110
-110	-120	-110	-120	-110	-120
-120	-130	-120	-130	-120	-130
-130	-140	-130	-140	-130	-140
-140	-150	-140	-150	-140	-150
-150	-160	-150	-160	-150	-160
-160	-170	-160	-170	-160	-170
-170	-180	-170	-180	-170	-180
-180	-190	-180	-190	-180	-190
-190	-200	-190	-200	-190	-200
-200	-210	-200	-210	-200	-210
-210	-220	-210	-220	-210	-220
-220	-230	-220	-230	-220	-230
-230	-240	-230	-240	-230	-240
-240	-250	-240	-250	-240	-250
-250	-260	-250	-260	-250	-260
-260	-270	-260	-270	-260	-270
-270	-280	-270	-280	-270	-280
-280	-290	-280	-290	-280	-290
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-330	-340	-330	-340	-330	-340
-340	-350	-340	-350	-340	-350
-350	-360	-350	-360	-350	-360
-360	-370	-360	-370	-360	-370
-370	-380	-370	-380	-370	-380
-380	-390	-380	-390	-380	-390
-390	-400	-390	-400	-390	-400
-400	-410	-400	-410	-400	-410
-410	-420	-410	-420	-410	-420
-420	-430	-420	-430	-420	-430
-430	-440	-430	-440	-430	-440
-440	-450	-440	-450	-440	-450
-450	-460	-450	-460	-450	-460
-460	-470	-460	-470	-460	-470
-470	-480	-470	-480	-470	-480
-480	-490	-480	-490	-480	-490
-490	-500	-490	-500	-490	-500
-500	-510	-500	-510	-500	-510
-510	-520	-510	-520	-510	-520
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-550	-560	-550	-560	-550	-560
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-670	-680	-670	-680	-670	-680
-680	-690	-680	-690	-680	-690
-690	-700	-690	-700	-690	-700
-700	-710	-700	-710	-700	-710
-710	-720	-710	-720	-710	-720
-720	-730	-720	-730	-720	-730
-730	-740	-730	-740	-730	-740
-740	-750	-740	-750	-740	-750
-750	-760	-750	-760	-750	-760
-760	-770	-760	-770	-760	-770
-770	-780	-770	-780	-770	-780
-780	-790	-780	-790	-780	-790
-790	-800	-790	-800	-790	-800
-800	-810	-800	-810	-800	-810
-810	-820	-810	-820	-810	-820
-820	-830	-820	-830	-820	-830
-830	-840	-830	-840	-830	-840
-840	-850	-840	-850	-840	-850
-850	-860	-850	-860	-850	-860
-860	-870	-860	-870	-860	-870
-870	-880	-870	-880	-870	-880
-880	-890	-880	-890	-880	-890
-890	-900	-890	-900	-890	-900
-900	-910	-900	-910	-900	-910
-910	-920	-910	-920	-910	-920
-920	-930	-920	-930	-920	-930
-930	-940	-930	-940	-930	-940
-940	-950	-940	-950	-940	-950
-950	-960	-950	-960	-950	-960
-960	-970	-960	-970	-960	-970
-970	-980	-970	-980	-970	-980
-980	-990	-980	-990	-980	-990
-990	-1000	-990	-1000	-990	-1000

The table shows the closing prices in London on Friday and in America on Thursday. The index is based on the price of the UK computer in the table. Highs and Lows have been shown where necessary.



## Brake on electronics R&D

by Kevin Pearson  
THE electronics industry is still increasing its R&D expenditure despite the recession, but the rate of increase is slowing down, according to a Confederation of British Industry survey.

While the electronics sector upped its R&D spending by 14% between 1978 and 1981, in the rest of the economy was distinctly flat, following a slight increase in 1978, according to the CBI report R&D in Recession Too?

The report also shows that be-

tween 1975 and 1978 electronics R&D rose by 25% in real terms.

On the international front, the picture is even gloomier: the UK is in fifth position behind all its major competitors - the US, Japan, West Germany and France.

Two industrial sectors, electronics and chemicals, "probably now account for 50% of R&D in manufacturing and construction" in the UK, the report says.

And the responsibility for the electronics spending comes not as a result of increased economic ac-

tivity, but from the burden of defence expenditure which falls heavily on the aerospace, telecommunications and electronics sectors.

Sir Campbell Fraser, president of the CBI, said: "Survival and prosperity in the medium to long term mean expenditure now on forward planning, on investment, research and development and on training."

R&D in Recession Too? Available from CBI Publication Sales, Centre Point, 103 New Oxford Street, London WC1A 1DU.

## Mini specialist moves into micros

HULL-based DEB OBM. Alverton is to move into the micro market this year. Managing director of the microcomputer specialist, Alan Coates, said it was looking at a number of proposals, including working with DEC again.

Alverton had announced recently that for both 1981 and 1982, sales of its 16-bit microcomputers had risen by 50% on the previous year, and that it was planning to expand its

annual sales figure of around £3 million is projected for the end of September.

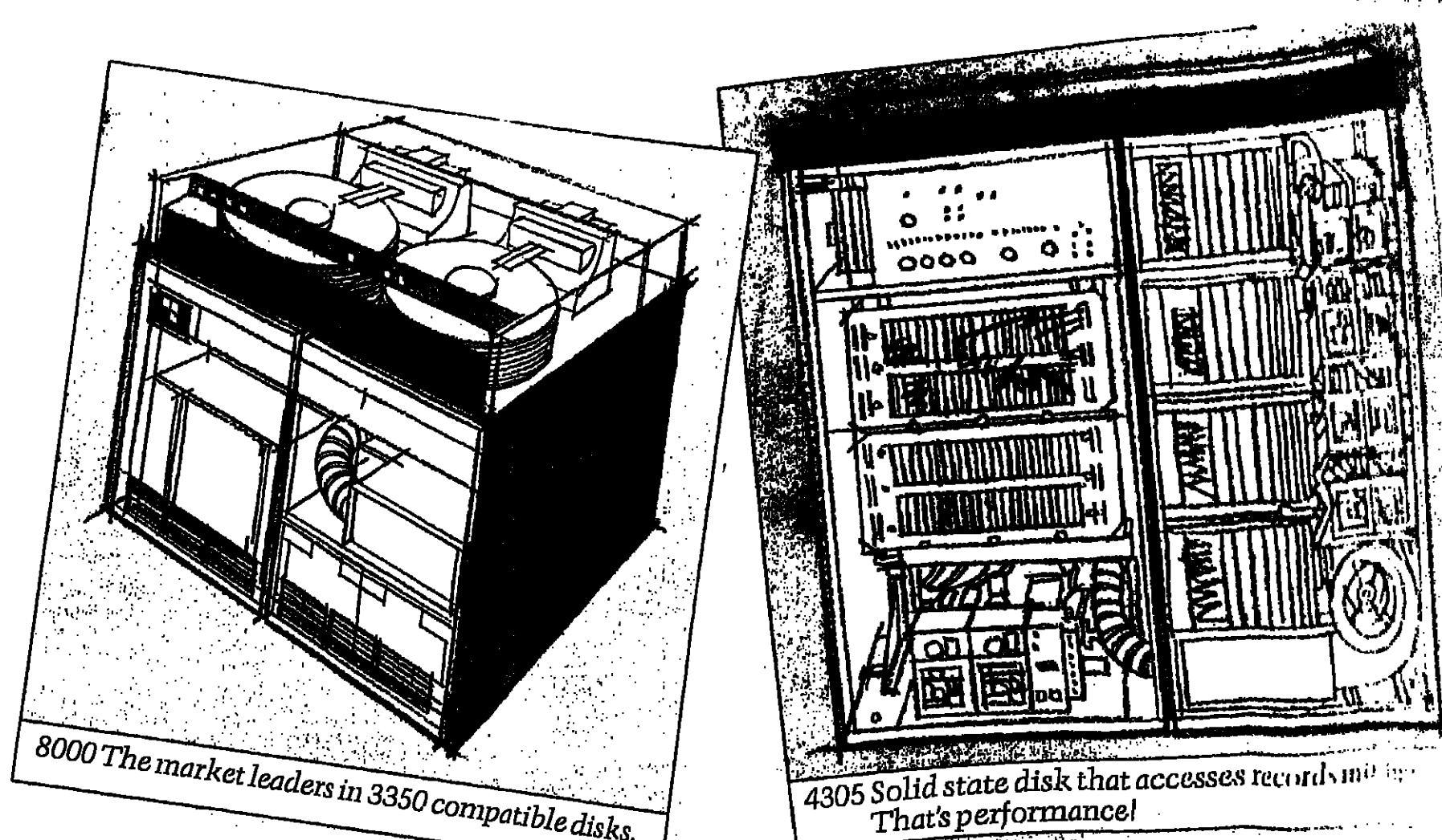
It intends to recruit at least a dozen more staff at the Hull, Bradford and High Wycombe centres over the next year. The move, Coates said, could boost recruitment to 100.

Coates said Alverton had supplied 45 commercial mini-computers during the past year, com-

pared to 30 the previous year. This had been achieved without any more staff.

Five engineers had recently been taken on for the technical products division, and five more were needed for site preparation, installations and maintenance.

They were also recruiting three analysts/programmers in software development, and could need two or three more during the year.



8000 The market leaders in 3350 compatible disks.

4305 Solid state disk that accesses records in 100ms. That's performance!

4500 Tape drives with tri-density and built in cache buffer controller.

8890 Sybercache - The buffer disk controller for all of our disks on any operating system.

Storage Technology is the leading supplier of IBM compatible data storage products.

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to after sales service ensures that our products meet the needs of our customers.

STORAGE TECHNOLOGY

Leading the way for the future generation.



# So you think the staging of an IT exhibition is a doddle?

YOU might think that organising an exhibition at the Science Museum would be a doddle — just tell the various manufacturers you want to show their kit, and they queue up in their hordes outside your door.

Simple, isn't it? Dr Oliver Strimpele will tell you a different story. He is Curator for the Mathematics and Computing collections at the Science Museum, which includes the exhibits inside the gallery. He is also the unsung hero of the IT82 exhibition which took place there last year.

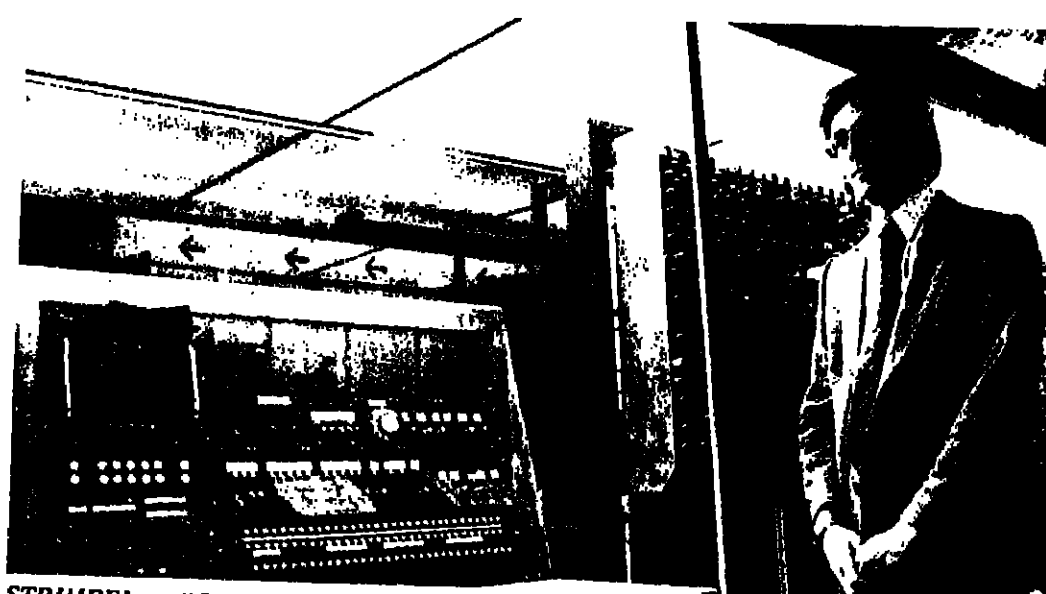
The show proved to be a fine balancing act, given the short timescale the Department of Industry allowed to get the exhibition off the ground.

"It was quite a logistics problem getting all the exhibits together, but we were lucky to have the backing of the DoI in our approach to the manufacturers," says Strimpele.

Even though the DoI lent some muscle, it was not all going smoothly. The companies were keen enough to provide kit, but they wanted to provide it off-the-shelf without the bother of modifying it for unattended operation.

It took a lot of persuading on Strimpele's part to have the modifications made. In one case the Science Museum had to write its own software in order to drive a Hewlett-Packard graphics tablet.

Quite a task when you realise that the exhibition had to cover as wide a cross-section of technology as possible — from Babbage's difference engine to the Kurzweil reading machine for the blind, banking autotellers, live weather



STRIMPELE... "Quite a logistics problem getting all the exhibits together".

satellite images every four minutes from Meteosat, British Telecom fibre optics and the Philips Laser-vision videodisc system, which happened to be the most popular exhibit.

And that was only half of it. The other half was organised by British Leyland showing things like the production of the Metro at its Longbridge plant. This was not just about the use of spot welding robots (only a film, actually — it would not be wise to have sparks and molten steel flying about and setting school uniforms alight), but about the whole story of information technology at British Leyland, including the use of computer aided design, telecommuni-

cations around the various plants, a video showing a computer simulation of the production line, and the use of computers in sales to match cars to customers. There was a robot too, a Puma, demonstrating the gluing of seals on to bonnets.

Now that IT82 is behind us, how does Strimpele see the future? "It was a bit of a rush and next time I would like to do a more in-depth type of exhibition backed by more research. Unfortunately this will not be for another two or three years."

He is now engrossed in preparations for the opening, in mid-1983, of the National Museum of Photography, Film and Television

in Bradford. The museum will be opened in phases. Strimpele will be responsible for the largest of the main galleries to be opened in the first phase, which will be devoted to imaging.

"We will probably call it imaging beyond the eye. We want to cover everything from astronomical images to electron microscopy and X-ray diffraction patterns," he explains.

"This will include live satellite images received by an antenna on the roof of the museum, such as those shown at IT82. What we want to get across is that photographs taken by optical means are not necessarily the finished product any more."

Could it all be part of a devious plot by the MSC to privatise Tops?

After all the effort breaking in, he had better at least have his calling card, the fellow argued to himself.

A family computer paper is no place to go into detail about the incident. But I can say that upon returning to the disgusting devastation in the offices, one of Shilina's pals commented: "At least our work has been fertilised."

## PLATFORM



Opening the Computing Society Association Software Financing Forum in London this month, John Butcher, Parliamentary Under-Secretary, stressed the need for the software industry to improve its communications interface with the finance world.

Jon Sanders, manager, Bank, 5 Oxford Street, also spoke at the forum, as ponds...

## Improving the interface with the world of finance

THE software industry is labour intensive with high fixed costs, few tangible assets and short product lives. Profits must be high and made quickly if investments are to be recovered. A financier must be convinced that he will get his money back plus an adequate return on the finance provided.

Bank finance is normally available provided the ability to repay from profits is adequately demonstrated. At Barclays, in addition to the usual overdraft or loan, we have our business start loans with royalty payments replacing interest charges, business expansion loans for second round financing and loans under the government guarantee scheme.

So, if the money is available how is the banker convinced?

The information he needs is usually presented in a written business plan, detailing product, market, management, profit and cash requirement forecasts. This document is the RS232 or the interface.

The product. What is it? What does it do? What is the customer buying? A simple description, preferably illustrated with specimen printed reports such as an invoice, monthly profit and loss, stock control, debtors analysis. Operators manuals are normally lengthy tomes. A short description of the system will suffice.

The market. Who is the customer and why? What is the competition in price/performance terms (including non-computer systems)? Is the price correct in relation to the value of the product? If the price is too high some potential buyers may ask for a discount; if the product appears to be too cheap some will be put off further enquiry.

For costings and profits, "one-off" costings are the simplest to present, even if some items are bought in larger volumes. For a software house the only variable costs (ie, per sale) are the storage media — usually a floppy disc costing £1-£3, an instruction manual and despatch costs.

Let us take as an example a new software house with one product planned to sell to distributors at £200. The initial costs incurred to date are calculated to be £20,000 (which includes time, not charged to the business, spent on developing the software). Firstly we must calculate the contribution and break-down point for Year 1.

Unit sale price  
Variable cost  
Contribution per unit

Initial investment  
Contribution per unit  
Pay back in units

So in financial terms the licensing deal requires no further investment, it achieves payback and real profits more quickly. It also releases the management from the task of running a distributor business and allows them to concentrate on finding the next product now, not when this one is nearing the end of its life.

Of course there are many fully capable of both developing and selling software but the latter is a short-term scale is very large for a young company; the alternative such as licensing, joint venture, wholesale agreements, sale of territorial rights should all be considered before selecting the business strategy.

The software industry is a vibrant star out-performing most other sectors of the economy. In the days we have recognised the achievement and our High Technology Unit in head office helps bankers to understand software technical jargon.

I hope that my comments will help the software industry to understand the language of the finance world.

So unless 105 units are sold in Year 1, a loss is being added to the initial R&D costs. But to be a viable business proposition all costs must be recovered over a period somewhat shorter than the forecast shelf life. This can be anything from a five minute wonder to a product which will be around in ten years, although it will need constant modification and improvement.

If the shelf life is very short the sales growth potential must be rapid, otherwise the product runs out of steam before the costs are

fully recovered. More typically one might plan to recover all costs over the first two years' life of the product. For our example this would be:

Initial investment  
Forecast fixed costs  
Total forecast cost  
Contribution per unit  
Pay back no. of units

Now we come to the management. If it is a new business, the previous experience have the management had in running a business? Can it market its product? Can it manage money, accounts and company procedures? If the business established then the evidence should be readily available. A financier is relying entirely on the management's ability to run the business profitably to ensure repayment.

And now it is time to stand back and ask: "Is this the best way forward?" In order to recover the initial investment a further £30,000 has to be invested in two years trading and only then will there be any real return for the owners of the business. Is there a way of reducing the investment and bringing forward the moment of real profit?

One possible alternative would be to seek a licence agreement with an established software distributor who has an existing mailing list and advertising space. He may be able to make the software more portable to other machines and operating systems, thus widening the market without additional investment. The charge made by the distributor will vary according to the work done and the type of product; for our example we will assume a 40% turnover payment to the distributor, excluding the £3 cost of each manual.

Unit sale price  
Variable cost  
Contribution per unit

Initial investment  
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Pay back in units

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## ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, January 27, 1983

## Counting the cost of data protection

THE Data Protection Bill, such as it is, can be said to be well on its way to enactment — despite serious misgivings from people of all shades of political opinion.

It has been criticised, with reason, for being the minimum legislation which the government could get away with and still fulfil the requirements of the European Convention for the Protection of Individuals, which was signed on the country's behalf by the Home Secretary.

Whatever the merits of the Bill, and its shortcomings, there is little doubt that it will be welcomed by Britain's computer industry. Without it, UK companies which operate in Europe would find major constraints on transferring their own commercial information from those European countries with data protection legislation to their British headquarters.

For the major international bureaux and database purveyors it would force a stark commercial decision — they could either give up their European business or stop processing in the UK.

The obvious choice for them would leave the UK's computer industry much worse off. But while the industry will on the whole be grateful for the Bill, its users will be much less enthusiastic. Because lurking in the background throughout the 14-year struggle to get a Bill to Parliament has been the question of its cost to computer installations.

It has been left to local government in the form of Lamsac (Local Authorities Management Services and Computer Committee) to come up with the first solidly-based estimate of the likely cost.

The UK's 521 local authorities will have to spend £11 million a year for two years to comply with the Act, according to Lamsac's figures. And at a time when local government spending is being curtailed, the authorities are understandably worried about paying this cost.

If the UK's town halls are worried, the country's other computer users should be as well. For the cost to them could be immense and they should start to count that cost.

As should the government, which so far has limited its view of cost of the Bill as only the administrative one of setting up a registrar and secretariat.

It is not enough, as the government seems to have done, to assume that the country must pay the cost and therefore it will be able to.

DESCRIBING Inmos products as "gull winged stainless steel chips", as one industry commentator did this week, may seem frivolous. In fact it is almost irresponsible, given that the very small volume of product which has appeared from Inmos has cost the UK taxpayer a straight £100 million so far, and a further £15 million, if the money is finally made available to Inmos later this week.

But what has all this investment been for? So far — and this is the very heart of the speculation and controversy surrounding the company — no one knows.

No production goals, no financial goals and no confirmed employment goals have been officially identified for the company.

Spokesmen for Inmos keep asserting that the "company met its goals for 1982". What were those goals?

"Ah well, we can't reveal those — commercial confidentiality and all that" is their stock answer.

With £100 million of public money down and £15 million to go that is treating the public as a bunch of idiots.

Both the British Technology Group and the Inmos management cringe when comparisons are drawn between the company and the inglorious De Lorean car company affair. But that fiasco was at least partly due to a failure of public accounting arising primarily from the secretive way the company went about its actual business.

This time the public are in for even more money, with even less to show for it. Any new funding must be accompanied by a full public disclosure of just what Inmos is, supposed to be achieving, and when.

1984 and all that... THIS week's example of the strange things people say about computers was sent in by B. F. James of Bracknell, Berks, who writes:

The power of a 32-bit computer is illustrated by comparing it to 8-bit computers — a "bit" being the number of digits of information a computer can handle at one time.

## LETTERS

## UK skill in innovation not in producing

YOUR editorial (CW, January 6), reiterates the theme, which unfortunately seems true, that the UK skill lies in innovation rather than producing.

As the recent government reshuffle confirms, it is the product of Oxford and Cambridge that is largely running this country. Perhaps it would be more fruitful

for BT to fund these two illustrious universities to develop courses which will promote our application skills rather than fund Aston and York to provide new courses in electrical systems engineering (reported in same issue).

Epping, Essex.  
A. F. LOY

## The meaning of CP/M

WITH regard to the letters on CP/M (CW, January 6), it would be natural to assume that Digital Research itself knows the answer.

To this end I enclose a copy of a page from appendix H of the CP/M Operating System Manual, published by Digital Research.

This is marked "Copyright © 1976, 1977, 1978, 1979 and 1982 by Digital Research" and was first printed in July 1982.

All one has to do is read the manual.  
Hatfield, Herts.  
E. J. BROWN

Extract from the Digital Research manual:  
Control Program for Microcomputers: See CP/M.

CP/M: Control Program for Microcomputers. An operating system that manages computer resources and provides a standard systems interface to software written for a large variety of microprocessor-based computer systems.

The Editor welcomes letters commenting on subjects published in Computer Weekly, or on original topics. All letters must be accompanied by the writer's name and address, not necessarily for publication.

## Satisfied with systems

I HAVE just read your report (CW, January 13), on user satisfaction with their systems. I see that IBM and DEC topped the poll of minicomputer users (with significant numbers of responses) with scores of 3.1 on the overall satisfaction index.

Now by my mathematics, but maybe not yours, 3.2 is a higher number than 3.1 and 3.3 is a significant number of responses by any standards.

YOUR contributor Barrie Sherman asks (CW, January 6), "How do we explain technology to the kids of Brixton?"

You should send him along to our official opening (January 25) and we will show him the start we have made at the Brixton ITC.

He would also be able to meet Lola Thomas, who manages a Sight & Sound training centre at Toxteth, teaching the use of text processors.

DENNIS E. HACKING  
Manager, Brixton ITC  
London SW9

Lateral thought saves time  
A LITTLE "lateral" thinking will save a step ("pouring") in the algorithm in Puzzle (CW, January 13).

1. Place container Y inside of X (not a pouring)  
2. POURING 1. fill X (and thus Y at same time)  
3. (Carefully) take Y out of X

So why didn't Hewlett-Packard get even one mention in your report?

A. J. PACE  
Chelmsford, Essex

Editors Note: You are right. The reporter took into account the fact that 9.1% of HP users would not recommend their system to other companies, against 4.8% of IBM mini users and 4.0% of DEC users.

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D. T. WYNN  
CCTA  
London SW1

## DOWNTIME

## A 'date' for Miss World

REACTING perhaps to criticism that the Miss World competition is basically exploitation masked by a thin layer of glamour, the Mortleys are to offer the girls a way out of the cattle market and on to a career ladder.

This year contestants will sit a computerised aptitude test to find out if there is anything useful they could do after the show. And the winner — if tests show she has the flair — could be offered a job by

Japanese micro maker Epson.

Last year's winner was a computer engineer. It seems she must have been whispering sweet something to the organisers on the subject of information technology.

At any rate they have decided to put a computer into the Royal Albert Hall this year to collate the results.

Could it all be part of a devious plot by the MSC to privatise Tops?

## Sordid tale from Japan

THE footsteps of truth are gradually covered over by the sifting sands of history, especially when the subject, be it man or corporate entity, becomes a public success.

Take the case of the Japanese computer maker Sord, whose boss and founder, Takayoshi Shilina, must go down as the Oriental Clive Sinclair. A strange little book, titled Flame, has suddenly landed on my desk to tell me all about the

early adventures of this most Occidental of Nippon.

But his success, after an intriguing catalogue of amusing failures, was no accident. Shilina tells the story of Sord's first burglary — and a Sord tale it is.

For those with the stomach for such things, the story is that the burglar reacted obscenely to the lack of assets to be found in the Sord offices.

After all the effort breaking in, he had better at least have his calling card, the fellow argued to himself.

A family computer paper is no place to go into detail about the incident. But I can say that upon returning to the disgusting devastation in the offices, one of Shilina's pals commented: "At least our work has been fertilised."

## 10 YEARS AGO

FROM COMPUTER WEEKLY OF JANUARY 25, 1973: A new data communications system, the Cyber 1000, was announced by Control Data... Minister of Education Margaret Thatcher visited the ICL systems headquarters at Bracknell.

## Heart of the industry

THE computer industry will set us all an example this Easter when 105 of its members jog a total 6,020 man miles for charity on the road from Lands End to John O'Groats. The runners aim to convert each mile run into £5 for the British Heart Foundation and Arthritis and Rheumatism Council — a total of £525,000.

There will be seven 15-man teams from each of the organisers — Kalamazoo Business Systems, BL Systems, Rowntree Mackintosh, Compucon, Barclays Bank, Forward Trust and a motley collection of Computers. The run will be a relay with each team member running one long or several short stages a day.

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## Beauty on a bike

KEEP fit with the microcomputerised Laser Bike — that is the latest message to rich Americans with \$20,000 burning in their wallets. The beauty of the bike is that you can enjoy all manner of simulated landscapes as you slog away on the spot.

Just slot in a programmed laser disc, pedal away and the landscape rolls by on a 45-inch screen placed at eye level in front of the machine. And this is not all. Bumps in the road are transmitted to the bike by the computer, and it is possible to choose course at road forks by pressing a button.

It could be just the answer I have been seeking for my chronic weight problem.

Just slot in a programmed laser disc, pedal away and the landscape rolls by on a 45-inch screen placed at eye level in front of the machine. And this is not all. Bumps in the road are transmitted to the bike by the computer, and it is possible to choose course at road forks by pressing a button.

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## Liveware File

by Don

by Don

by Don

by Don





## All the latest for these Newsmen

THE words newspapers and new technology do not readily mix in the same sentence. Only a handful — and none in Fleet Street — have introduced intelligent video terminals into their editorial offices. And none has so far gone the whole hog to single key-stroking with news copy input by reporters being edited on screen and then sent directly to phototypesetter.

It is perhaps significant that the newspaper ahead of the field, the

Nottingham Evening Post, spilled all its union blood to bring in new technology. The paper is now benefit of union, and backed by the NUJ and NGA.

No other newspaper has had the stomach to follow the Nottingham Post's draconian example. Union co-operation has been gently sought, but little quarter given.

Something of a breakthrough, however, came at the end of 1982 at the News, Portsmouth, with introduction of VDUs to its editorial offices to replace typewriters. The move came five years later than at the Nottingham Post, but with a difference — the unions have given it their muted blessing.

The agreement is for a three-phase approach. Phase One has been implemented at all six newspapers of the group and gives reporters intelligent Digital Equipment VT 173 terminals linked to two DEC 11/70s. The system is called EMS, Editorial Management System. Phase I also allows for two of the weekly newspapers to be edited on the screen. After editing, the subs key in the headlines and typesetting instructions to printers.

Phases I and II have both been agreed by the unions on condition that NGA members be involved with input of news copy at some stage of the production process, usually typesetting.

The problem comes at Phase III, which is not yet agreed. Phase III aims to bypass the production system by making the news copy entered by the reports directly available on file for phototypesetting.

The NGA wants assurances that keyboard operators whose jobs would disappear would be found

other jobs in the group. Management thinks there will be jobs on the journals printed under contract by the News group.

But the local branch of the NGA is not satisfied that such assurances are strong enough. The contract market is competitive, and the News Group might be forced to offer new technology also to contract journalists, points out Richard Page, chairman of the News Centre's Federated Chapel.

Page seems resigned to the eventual take-over by new technology. "Whether you accept technology or refuse, whether we go on the offensive or defensive, there will be job losses," he admits.

Meanwhile most journalists welcome the EMS, which already has had ten years to mature in the US where new technology is more readily lauded as panacea.

"Neither the subs nor I would ever dream of going back," enthuses Keith Newberry, editor of the Isle of Wight Weekly Post, one of the two main papers in the News group which already has Phase II.

A reporter at the News, Sharron McQuoid, finds her work quicker and easier with the new terminals, and spares her brain for the more creative aspects of her job.

Deputy news editor Keith Howitt is similarly optimistic, although since his job is to monitor the flow of stories through the system and amend where necessary, he is frustrated by any downtime.

But associate editor Peter Thompson insists that the system goes down only for occasional two-minute spells; any longer would be a liability with the tight deadlines of an evening paper.



HOWITT... Easier to control and edit flow of news stories

As with many packages of hardware and software, it is the little cosmetic niceties of the DEC EMS system that bring its users the greatest pleasure. One example is the transposition key, which allows reporters, who are notoriously bad typists, to transpose two adjacent characters at a single keystroke.

Another popular feature is the DEC UDK, or User Defined Key, which allows job control sequences to be entered at a single stroke. News stories can then be sent downline, or routed to a particular file.

Eventually the stories would be routed directly to the appropriate section, for example the sports section, for lay-out and printing.

The equivalent of Phase III is already working at the Nottingham Evening Post. But there is more technology to come — the

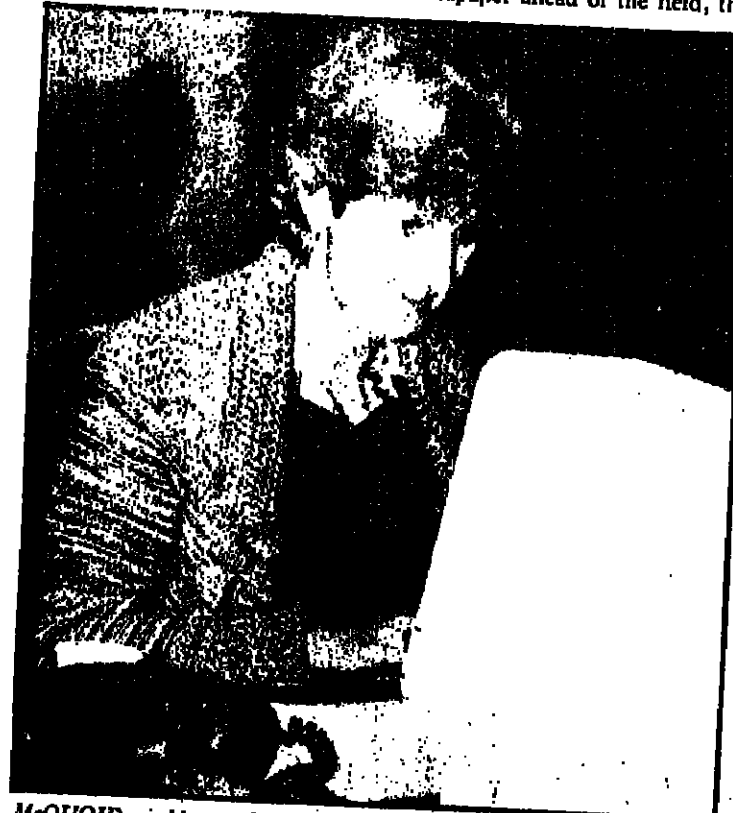
layout and design of newspaper pages on a video screen.

The Nottingham Post hopes to introduce screen layout introduced by unions this year, but most papers will have to wait much longer, possibly into the next decade — if they survive that long.

Yet such systems have already been implemented in the US, and full colour make-up machines can be bought from the likes of Scitex. Most newspaper managers will have to console themselves that these machines will have replaced further by the time they get them.

Meanwhile the unions must temper their Luddite leanings with the realities of declining circulations and concentrate on finding new jobs for their members in other parts of the media business.

Where possible they should insist that no net jobs are lost — but it will not always be possible.



McQUOID... No nostalgia for typewriter

## The 2,000 consultants who deal in DP jobs

Les King continues his series on changing job functions and titles.

WHENEVER I attend the annual round of media parties, I am amazed by the sheer number of people earning a living from computer recruitment.

The 350 or so computer recruitment consultants listed in the Computer Users' Year Book are essentially small businesses comprising a large number of "man-and-a-half" outfits, plus a handful of big companies with 20 or more full-time employees.

The limited information available would suggest that there are at least 2,000 full-time recruitment consultants operating in the data processing field.

In terms of experience, there is no typical recruitment consultant, and backgrounds range from 16-year-old school-leavers to seasoned data processing professionals.

The common qualification of all financially-successful recruitment consultants is a capacity for hard, repetitive work plus the ability to sell in an extremely competitive and fast-moving environment.

There are two approaches to recruitment which I will call, for convenience, consultancy recruitment and agency recruitment.

With consultancy recruitment, the client retains the recruitment company by payment of up-front money, usually in the form of an advertising budget.

With this commitment, the recruitment company can afford to allocate resources to the in-depth searching of the staff requirements of a client.

By contrast, the agency approach involves the client paying the agency a fee for each successful placement.

By Philip Hunter and Thomas

paign (including the production of detailed information packages) and the total administration of the recruitment exercise.

Agency recruitment is a messier process in which the recruitment company collects requirements by intense telephone canvassing, generates candidates from general advertising and attempts to push each candidate through the potential client's door ahead of the other 20 agencies to which the candidate might have applied.

The recruitment of contract staff is done almost entirely on an agency basis, where a delay of 30 minutes in providing candidate details to the client can often make the difference between success and failure.

Although the acquisition of staff recruitment skills can be useful to the aspiring DP manager, the reliability of recruitment consultancy as a career move depends very much on the individual's conception of a "professional" service.

Despite a number of fanciful advertisements appearing in recent months, high earnings in recruitment require a consistently high level of performance.

A few years ago, the industry standard for a permanent staff consultant was around 40 placements a year, although in today's more difficult marketplace, most individuals would be hard put to achieve 30.

Remuneration packages are many and varied, but this level of performance would typically produce earnings of around £20,000 (plus car) on a basic salary in the range £3,000-£5,000.



We're having a bit of trouble getting hold of free data.

## Up and running 2 days after arson

by George Black

TWO days after an arson attack wrecked its computer installation, a Leamington Spa business had machines up and running again.

A Hewlett-Packard computer, valued at about £150,000, was burnt out at the Warwickshire works of Market Location. "It seems that mischievous vandals broke a window and threw in a petrol can and a lighter match," said Andy Cobley, of Market Location's data processing department.

"When I got there half an hour later the whole room was completely blacked out. The equipment seems to be a write-off."

But a "quick service" enabled them to go live again by the middle of Tuesday. The fire occurred during the early hours of the Saturday morning.

It was the first operation carried out by the disaster team of Anglo-American Computing Services. The service is intended to cover any mishap not normally covered by manufacturers' maintenance, including flood and sabotage.

Anglo-American had an air-conditioned van custom-built for it by the Midlands-based firm Status Mobile. The van touched the site from its base in only 15 minutes after receiving the distress call.

"The response was amazing," said Cobley. "The only delay was caused by our having to clean tapes again."

The van connects up to the HP3000 and undertakes to stay on site for up to 16 weeks while the owners' insurance claim is sorted out. Anglo-American has 15 HP customers and says that if the service continues successfully they will soon be bringing into operation a DEC van.

Clients pay a quarterly fee of £500 for a guarantee that the rescuers will be there within 24 hours.

Martyn Harries, of Anglo-American, said the company had been in business since 1977, and last year had been looking for ways of diversifying its trade. "We thought there could be a need for an emergency taskforce and it looks as if we are being proved right," he said.

## Switch to IBM gives staff an advantage

INLAND REVENUE has a potential management problem after the decision to convert its internal payroll computing, based in Worthing, from ICL to IBM. The problem arises because the 120 Cobol programmers in the Worthing offices will learn all about IBM to cap their ICL experience — and become that much more employable.

David Buck, data processing co-ordinator for the Revenue, admits managers are worried that some programmers will leave after picking up IBM experience. "The programmers will probably welcome the challenge of a new machine."

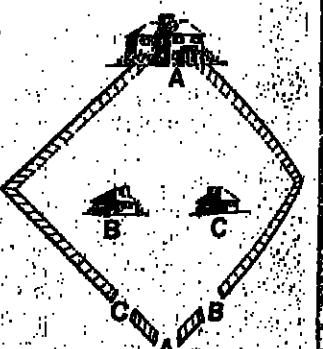
The burden of converting the operators lies with IBM, but the Revenue has gone to Data Training to teach the programmers the delights of IBM's VSAM data access methods.

"There is also quite a lot of new stuff to learn on the job control side," says Philip Corker of Data Training.

At present the programmers use ICL's Range Cobol based on the Ansi 74 standard. An eight-day course is being laid on to convert them to IBM Cobol.

IBM won the Inland Revenue contract after competing against ICL and a third unnamed US company in open tender. Earlier in 1982, the bigger PAYE contract went to ICL, which until now has dominated the Revenue.

## PUZZLER



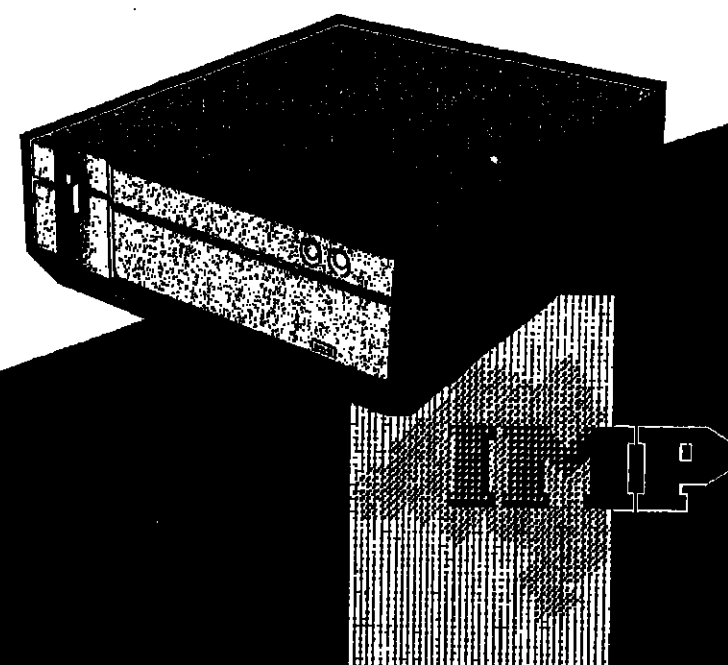
THIS diagram represents a plot of land with three gates at the "South" end. The surrounding fence connects with the sides of the large house (A) to the North, and there are two smaller houses (B and C) in the centre of the plot.

The task is to lay three separate enclosed pathways, at ground level and through the plot — A to A, B to B, C to C — in such a way that none of them crosses. No overpasses or flyovers are allowed.

Yes — it can be done! See page 35 if you don't believe us.

68000 PROCESSOR  
IDRIS MULTI-USER OS (UNIX-RELATED)  
OR UCSD p-SYSTEM  
256Kb FAST RAM  
10Mb 5 1/4" WINCHESTER  
8" DSDD FLOPPY

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The IMP-68 comes fully configured and ready to use. For £7,500 you get 10Mb of internal Winchester storage, an 8" DSDD floppy disk, 256 Kb of fast dynamic RAM, 2 serial lines and the Idris Operating System with 'C' and Pascal compilers.

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Consett, County Durham, DH8 65Y, England. TEL: 0207 503481. TELEX: 53429 PAGE G



## PEOPLE

## MD for Cable and Wireless Services

CABLE and Wireless UK Services has named Christopher Weeks managing director. He was previously parent board director with the Berc Group, responsible for Continental Europe and international marketing. Before that he was managing director of



Weeks

Burnt Electronics, supplier of military two-way radio systems. One of Weeks' first tasks with Cable and Wireless will be the further development of marketing strategies for the telecommunications, computer and maintenance divisions of the company.

CTL is continuing its expansion into the Convergent Technologies workstation market with the appointment of two senior sales executives for the London and Midlands region. Derek Carter (Midlands) was previously sales director for Act (Microsystems) in Birmingham, and James Bowle (London), who will be responsible for all government departments accounts including the Ministry of Defence, was formerly with Century Data Systems in California.

Former Eitel Computing director Dennis Samuel has joined Consultants (Computer and Financial) to take responsibility for the project management of CCP's stockbroking system Fiscal, and its investment management system Tims.

Jill Bloxham (below) has been promoted to regional sales manager at Cifer Systems Nottingham sales and demonstration office. She has been with the company for two years as a sales executive.



Three new sales appointments have been made at Cambridge Interactive Systems. Dave Cornfield joins from Prime as Southern region manager; Hugh Fingland, formerly of the CAD Centre, has been appointed operations manager; and John Jeffries, also from Prime, becomes customer services and hardware support manager.

Sigma Electronic Systems has appointed Neil Burnett to its sales team as area sales engineer for the West Midlands and Wales. He joins the company from Systime, where he was a senior sales representative.

Tony Gray has joined Management Science America as systems consultant. He was previously technical support analyst for the Automobile Association.

After eight years in instrumentation, control and automation trade association work, Marjorie Powell has retired. She first entered the industry through the British Industrial Measuring and Control Apparatus Manufacturers Association, where she became executive secretary. Later she has been director, communications, of Gambica in the UK, which now incorporates Bimcam. Gambica is a federated member of Bema, the British Electrical and Allied Manufacturers' Association.



Computer Systems Development has appointed Gordon Frosdick as product manager, distribution systems. He was formerly group distribution manager at International Stores.

Management Science America has appointed Keith Swain as a systems consultant. He was previously with HFC Trust, where he was responsible for installing the MSA General Ledger system.

Tony Moylan has joined NIHE (National Institute for Higher Education) in Dublin as head of the School of Computing and Quantitative Methods. He was previously senior specialist at the Irish Management Institute.

Comart has appointed Kenneth Goddard as sales manager, PC products. He was previously dealer manager with Data 100 and account manager at Systime.

Spiro Omfalos (above) previously technical training manager with Commodore, has joined Epsom UK as technical services manager. He will be responsible for the services of all Epsom products and for providing dealers with technical information.

Michael Acheson has been appointed director of international marketing for Data General in France. He joined the company at the end of 1980 as sales planning manager for Europe. A year later he was promoted to European marketing director.

Gerhardt Baker has been appointed a senior consultant to the National Microelectronics Applications Centre in Limerick, Eire. He was previously with Philips Telecommunications in Holland.

Immac has named David Aldridge international group product manager. He was formerly OEM manager at Rank Xerox. Anita Taylor has been appointed Immac marketing executive. She has been with the company for one-and-a-half years.

Peter Errington has rejoined the Arbat salesforce after a year of independent communications consultancy work.

MatEval, which manufactures automatic ultrasonic imaging systems, has appointed a new managing director, David Corne, formerly a managing director of the GEC group.

Terry Tebuit has been appointed customer services manager Delta Data Systems. He joined the company after eight years at Nixdorf, where he was lead West branch engineering manager.

Beauchamp Computer Systems has appointed 22-year-old Jim Wickes (below) as a director. He will have overall responsibility for marketing the company's personal and small business systems. He was previously in sales with a special business division of Xerox.



Stag Terminals has strengthened its sales and marketing team with four new appointments. Colin Galko, formerly of AGB research at Comshare, has been appointed marketing manager. Pat Gough joins as sales support manager. Ian McLeod and Kevin Williams have joined the firm as salesmen.

Brian Hutton has joined Applied Systems as a training consultant to service the Northern Counties. He was previously a marketing with two top hardware manufacturers.

## DIARY

**FEBRUARY 1**  
Computer security workshop. NCC, NCC, Oxford road, Manchester 1. 9.00. Details Sheila Wilkinson on 061-228 6333.

**FEBRUARY 2**  
A view of networking - demands and growth in networks, their size and distance, rewards and perils. IDPM Sussex branch. American Express, 154 Edward Street, Brighton. 7.00.

DP qualifications, method or madness? IDPM Central London branch. Altergo, Imperial House, 15-19 Kingsway, London WC2. 6.00.

**FEBRUARY 3**  
The mighty micro - the current state of the art. IDPM Birmingham branch. New Imperial Hotel, Temple Street, Birmingham. 7.00.

**FEBRUARY 8**  
Presentation of an application system of stock control and invoicing at Rothervale Joinery. IDPM Sheffield branch. Grosvenor House Hotel, Sheffield. Contact John Readman on 618539. 7.00.

## CONFERENCES

AN exhibition of computer-based instruments, called Control 83, will be held at the London Kensington Exhibition Centre from February 15-17, and at the Great Hotel in Runcorn from February 22-24. It will feature some of the most advanced equipment in the field of industrial and process control, say organisers Francis Tomlinson & Associates. Exhibitors include Ferranti, GEC, Burr-Brown, SPL International and Westinghouse. The exhibition has been organised in conjunction with Project Presentations and complimentary tickets are available from Francis Tomlinson, 38 Ashburn Place, London SW7 4JR. Tel: 01-373 3595.

SESSIONS on medical information processing will be included in the 17th annual Hawaii

Weather forecasting - current and future computer allocation. IDPM West London to Chalfont branch. Bull Hotel, Chalfont Cross. 7.30.

Seminar implications of the new Cobol standard. BCS Cheltenham and Gloucester branch. Celia Hotel, Cheltenham. 2.30.

Local area networks. BCS Oxford branch. Maple Room, Fairfield Hall, Croydon. 7.15.

The computer in court. BCS Harlow branch. The Norfolk Room, Saxon Inn, Southern Way, Harlow. 7.15.

Auditing of computers. BCS Kent branch. Department of Computing, University of Kent. 7.15.

**FEBRUARY 9**  
Mercury - the alternative to British Telecom. BCS Kingston branch. Kingston-upon-Thames, Surrey. 7.30.

Intelligent query languages in databases. BCS Belfast branch. Ulster Polytechnic. 2.30.

Teaching computers. BCS North London branch. Wat Lodge Park Hotel, Cockfosters. 8.00.

notulu from January 4-6 1983. Papers are required from researchers and practitioners in the information processing field. For example, alternative programming languages in medical computing; computers and handicapped people; medical databases and database management; and innovative applications. Abstracts of about 200 words should be submitted by May 2 this year. Papers should be typed on double-spaced manuscript, 10 pages long and submitted in triplicate by July 8. The conference is sponsored by the University of Southwestern Louisiana and the IEEE Computer Society. In co-operation with ICAI, Send abstracts and papers to: Dr. Thomas Cousins, Computing Science Department, University of Southwestern Louisiana, P.O. Box 10470, Lafayette, LA 70501.

## PASSPORTS

The Foreign Office is not being completely frank about machine readable identity documents, says Martyn Harris

## Big Brother is going to be watching you — via your passport

If your passport photo makes you look like an urban guerrilla, and you get the panics every time you go through immigration, it will probably be even worse before long.

From January 1985, instead of just fixing his steely gaze on your sweaty brow, the immigration officer could be poking your passport into an OCR scanner that will check your details and (possibly) tick you off against a list of undesirable.

Machine Readable Passports (MRPs for short) have been firmly accepted in principle by government and Foreign Office. A joint departmental committee is currently examining new designs for the passport (which will also conform to an EEC standard), and, according to a Foreign Office statement, prototype machines are already being tested at various UK ports of entry.

Nevertheless, the new documents will not have an easy passage to public acceptance. No less a body than the House of Commons Foreign Affairs Committee has vigorously attacked the MRP on several counts, not least of which is the cost to the public purse.

Civil rights groups like the National Council for Civil Liberties and the Joint Council for the Welfare of Immigrants, which have attacked abuses of the passport system in the past, also view the introduction of MRPs with suspicion.

The final shape of the new passport has not yet been finally agreed but the Machine Readable Passport Development Committee (pure *Yes Minister*, this), which was set up in 1981 by the Foreign Office, Home Office, Her Majesty's Stationery Office and Department of Industry has come up with an outline specification.

It will be a 32-page book in a burgundy red cover with "United Kingdom of Great Britain and Northern Ireland" on the front and the familiar rubric "Her Britannic Majesty's Principal Secretary of State requests and requires..." inside.

It will also have the stamp of the European Community on the cover, and more unfamiliar still, a plastic laminated page with your personal details printed on the outer margin in machine-readable databases. BCS Belfast branch. Ulster Polytechnic. 2.30.

Teaching computers. BCS North London branch. Wat Lodge Park Hotel, Cockfosters. 8.00.

What is more, it will not contain any information that is not already on the passport. This is an important point for groups like the Joint Council for the Welfare of Immigrants, which has complained in the past about various secret codes used on traditional passports.

These include innocent-looking techniques like underlining and capitalisation which have been used to warn immigration officers that the passport holder, while a British citizen, does not have the right of residence in the UK.

It was the growth of mass travel and the congestion at ports of entry which first led to the proposal for MRPs from the International Civil Aviation Organisation, which hoped to speed the immigration process for airline passengers.

For example, in a time of war or political crisis, it might seem expedient to restrict travel by, say, citizens of foreign extraction, political activists, or even members of legitimate opposition groups.

Furthermore, although present plans do not envisage this, there is a possibility of a large, integrated computer database which could keep track of the movements of certain categories of quite innocent citizens over a number of years, or even of all citizens. This information would, moreover, be available to other government departments such as the Home Office, Customs and Excise and the Inland Revenue.

This is not the purpose of the MRP at the moment, any more than it was the purpose of the DVLC computers in Swansea to provide information about car owners to the police on matters that had nothing to do with car ownership. Yet this is now one of the routine functions of the DVLC.

**The only place UK citizens will be able to use MRPs for some years will be the UK**

Although governments justify passports on the grounds that they assist their own nationals to cross frontiers, to seek consular assistance and to identify themselves to banks and foreign authorities, there are some MPs among them, who question the need for passports at all. Before 1914 they were not obligatory except for entering about half a dozen countries, and anyone popping over to Boulogne for the day would have been outraged by the idea.

During the First World War, Defence Of The Realm Regulations made passports compulsory for any British national travelling outside the UK, and the system was retained after the war.

Unlike the original passport, which was a prized personal reference, signed by the sovereign himself, the document became an instrument of social monitoring and control. Even today there is no basis in Statute or case law for passports, and technically you can enter or leave the country without one, provided you can establish your British citizenship to the satisfaction of the immigration officer.

At the moment, immigration officers check any passports they are dubious about against a manual "suspect list". Heathrow Airport is currently trying out a suspect list held on a microcomputer, but the principle is the same.

The function of the MRP will be to allow all passports to be checked against such a list. Indeed, since the Foreign Office does not intend to check passports against a central database of all valid passports issued, this will be the only function of the MRP, apart from the purely mechanical one of making sure all the details are actually present on the passport.

MPs like Frank Hooley, George Foulkes and Anthony Grant are unhappy about the possibility of extending the suspect list. They have also wondered aloud about the possible extension of the

system to keep track of all citizens, and about the availability of the data to other government departments.

In its report on MRPs the Commons Foreign Affairs Committee finally concluded: "We are not convinced that the MRP is a desirable innovation or that public money should be spent on its introduction."

"In the light of current public concern about privacy and data protection we believe that action on this project should be suspended."

Rather surprisingly, the National Council for Civil Liberties takes a less hostile position. General secretary Patricia Hewitt says: "We are not against MRPs as such. Our concern is that they should not contain information that people cannot read and that their use should be overseen by the Data Protection Registrar."

But, as Hewitt observes, the government proposals for such a registrar are extremely vague and will need considerable beefing up before anyone is happy about the monitoring of the MRP project.

In a printed reply to the report of the MRPs the Foreign Office flatly rejected the criticisms, repeating its arguments that MRPs would speed up immigration control, that other countries were introducing MRPs, and that British travellers would be "left behind". Finally, the clincher, that British industry would lose export opportunities for the new equipment if plans were delayed.

Taking the arguments one by one: firstly, if all passports are religiously inspected it will certainly take longer than the present system where most people are simply waved through.

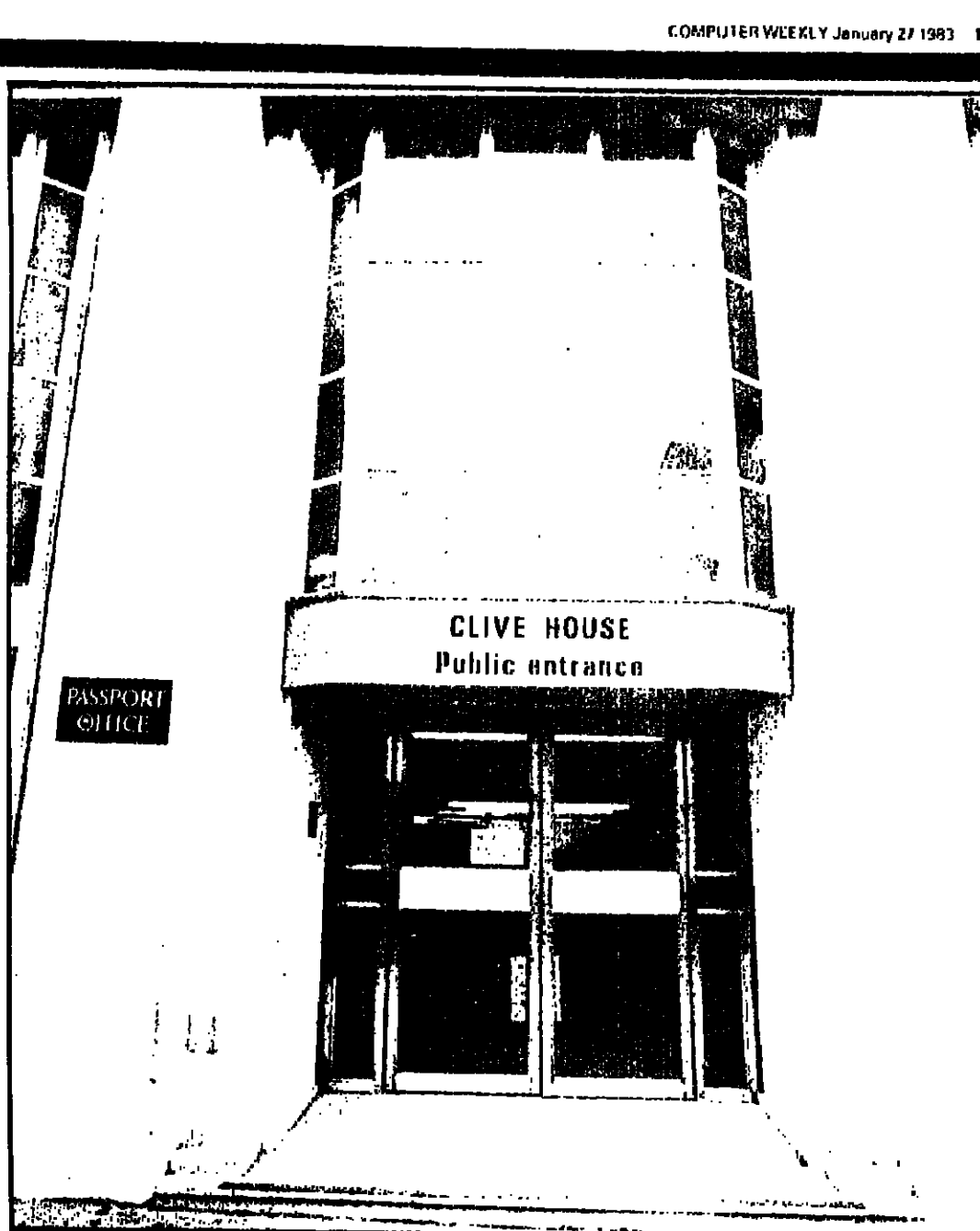
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Hooley is right about most people not having MRPs, which raises the FO's second argument that "other countries are working towards MRPs". In fact the only major country even experimenting with the idea is the US, which has a pilot system called TDIS in Washington.

Canada has computer production of passports, but they are not machine readable. In Japan, Italy, France, Germany and most other major industrial countries the production and inspection of passports is not only non-computerised, but less centralised and controlled than in the UK.

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Finally, there is the Foreign Office bludgeon about export orders, backed with the claim that prototype terminals are already on trial by the Department of Industry at various ports. In fact, the DoI denies that any such machines exist, far from being on trial anywhere.



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NOW in Birmingham — the centre of Industrial Britain...

# THE Midland Computer Fair

Personal computers  
Home computing  
Small business systems

Bingley Hall, Birmingham.  
April 28-30, 1983

Sponsored by Practical Computing and YOUR COMPUTER

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Make Sure Your Computer Products And Services Are Seen At The Midland Computer Fair

For the full story contact the Exhibitions Manager, The Midland Computer Fair IPC Exhibitions Ltd, Surrey House, 1 Throwley Way Sutton, Surrey SM1 4QQ.

Please contact me with further information about exhibiting at The Midland Computer Fair

Name \_\_\_\_\_

Position/Company \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

## Meet your market at

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Please send me details of exhibiting at Compec Wales.

Name \_\_\_\_\_

Job Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Signed \_\_\_\_\_



## PEOPLE MD for Cable and Wireless Services

**CABLE and Wireless UK Services** has named Christopher Weeks managing director. He was previously parent board director with the Beca Group, responsible for Continental Europe and international marketing. Before that he was managing director of

Burdett Electronics, supplier of military two-way radio systems. One of Weeks' first tasks with Cable and Wireless will be the further development of marketing strategies for the telecommunications, computer and maintenance divisions of the company.



Weeks

**CTL** is continuing its expansion into the Convergent Technologies workstation market with the appointment of two senior sales executives for the London and Midlands region. Derek Carter (Midlands) was previously sales director for Act (Microsystems) in Birmingham, and James Bowle (London), who will be responsible for all government departments accounts including the Ministry of Defence, was formerly with Century Data Systems in California.

Former Bstel Computing director Dennis Samuel has joined Consultants (Computer and Financial) to take responsibility for the project management of CCP's stockbroking system Fiscal, and its investment management system Tims.

**Jill Bloxham** (below) has been promoted to regional sales manager at Cifer Systems' Nottingham sales and demonstration office. She has been with the company for two years as a sales executive.



Three new sales appointments have been made at Cambridge Interactive Systems. Dave Cornfield joins from Prime as Southern region manager; Hugh England, formerly of the CAD Centre, has been appointed operations manager; and John Jeffries, also from Prime, becomes customer services and hardware support manager.

**Sigma Electronic Systems** has appointed Neil Burnett to its sales team as area sales engineer for the West Midlands and Wales. He joins the company from Systime, where he was a senior sales representative.

**Tony Gray** has joined Management Science America as systems consultant. He was previously technical support analyst for the Automobile Association.

After eight years in instrumentation, control and automation trade association work, Marjorie Powell has retired. She first entered the industry through the British Industrial Measuring and Control Apparatus Manufacturers Association, where she became executive secretary. Latterly she has been director, communications, of Gambica in the UK, which now incorporates Bimcam. Gambica is a federated member of Bema, the British Electrical and Allied Manufacturers' Association.



**MatEVAL**, which manufactures automatic ultrasonic testing systems, has appointed a new managing director, David Cowie formerly a managing director of the GEC group.

**Terry Tebult** has been appointed customer services manager at Delta Data Systems. He joined the company after eight years at Nixdorf, where he was London West branch engineering manager.

**Beauchamp Computer Systems** has appointed 22-year-old Jane Wickes (below) as a director. She will have overall responsibility for marketing the company's personal and small business systems. It was previously in sales with the special business division of Rex Xerox.



**Stag Terminals** has strengthened its sales and marketing team with four new appointments. Colin Gallick, formerly of AGB research and Comshare has been appointed marketing manager. Pat Gough joins as sales support executive. Ian McLeod and Kevin White have joined the firm as salesmen.

**Brian Hutton** has joined Applied Systems as a training and consultant to service the Northern Counties. He was previously marketing with two top hardware manufacturers.

**Spiro Omfalos** (above) previously technical training manager with Commodore, has joined Epsom UK as technical services manager. He will be responsible for the services of all Epsom products and for providing dealers with technical information.

**Michael Acheson** has been appointed director of international marketing for Data General in France. He joined the company at the end of 1980 as sales planning manager for Europe. A year later he was promoted to European marketing director.

**Gerhardt Baker** has been appointed a senior consultant to the National Microelectronics Applications Centre in Limerick, Eire. He was previously with Philips Telecommunications in Holland.

**Inmac** has named David Aldridge international group product manager. He was formerly OEM manager at Rank Xerox. Anita Taylor has been appointed Inmac marketing executive. She has been with the company for one-and-a-half years.

**Peter Errington** has rejoined the Arbat salesforce after a year of independent communications consultancy work.

## DIARY

**FEBRUARY 1**  
Computer security workshop. NCC, NCC, Oxford road, Manchester 1. 9.00. Details Sheila Wilkinson on 061-228 6333.

**FEBRUARY 2**  
A view of networking - demands and growth in networks, their size and distance, rewards and perils. IDPM Sussex branch. American Express, 154 Edward Street, Brighton. 7.00.

DP qualifications, method or madness? IDPM Central London branch. Altergo, Imperial House, 15-19 Kingsway, London WC2. 6.00.

**FEBRUARY 3**  
The mighty micro - the current state of the art. IDPM Birmingham branch. New Imperial Hotel, Temple Street, Birmingham. 7.00.

**FEBRUARY 8**  
Presentation of an application system of stock control and invoicing at Rothwell Joinery. IDPM Sheffield branch. Grosvenor House Hotel, Sheffield. Contact John Readman on 618539. 7.00.

## CONFERENCES

**AN** exhibition of computer-based instruments, called Control 83, will be held at the London Kensington Exhibition Centre from February 15-17, and at the Crest Hotel in Runcorn from February 22-24. It will feature some of the most advanced equipment in the field of industrial and process control, say organisers Francis Tomlinson & Associates. Exhibitors include Ferranti, GEC, Burr-Brown, SPL International and Westinghouse. The exhibition has been organised in conjunction with Project Presentations and complementary events are available from Francis Tomlinson, 38 Ashburn Place, London SW7 4JR. Tel: 01-373 3589.

**SESSIONS** on medical instrumentation processing will be included in the 17th Annual Hawaii International Conference on System Sciences to be held in Hilo

Weather forecasting - current and future computer allocation. IDPM West London to Oxford branch. Bull Hotel, Gerrards Cross. 7.30.

Seminar implications of the new Cobol standard. BCS Cheltenham and Gloucester branch. Carlton Hotel, Cheltenham. 2.30.

Local area networks. BCS Croydon branch. Maple Rooms, Fairfield Halls, Croydon. 7.15.

The computer in court. BCS Harlow branch. The Norfolk Room, Saxon Inn, Southern Way, Harlow.

Auditing of computers. BCS Kent branch. Department of Computing, University of Kent. 7.30.

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## PASSPORTS The Foreign Office is not being completely frank about machine readable identity documents, says Martyn Harris

# Big Brother is going to be watching you — via your passport

If your passport photo makes you look like an urban guerrilla, and you get the panics every time you go through immigration, it will probably be even worse before long.

From January 1985, instead of just fixing his steady gaze on your sweaty brow, the immigration officer could be poking your passport into an OCR scanner that will check your details and (possibly) tick you off against a list of undesirable.

Machine Readable Passports (MRPs for short) have been firmly accepted in principle by government and Foreign Office. A joint departmental committee is currently examining new designs for the passport (which will also conform to an EEC standard), and, according to a Foreign Office statement, prototype machines are already being tested at various UK ports of entry.

Nevertheless, the new documents will not have an easy passage to public acceptance. No less a body than the House of Commons Foreign Affairs Committee has vigorously attacked the MRP on several counts, not least of which is the cost to the public purse.

Civil rights groups like the National Council for Civil Liberties and the Joint Council for the Welfare of Immigrants, which have attacked abuses of the passport system in the past, also view the introduction of MRPs with suspicion.

The final shape of the new passport has not yet been finally agreed but the Machine Readable Passport Development Committee (pure *Yas Ameen*, this), which was set up in 1981 by the Foreign Office, Home Office, Her Majesty's Stationery Office and Department of Industry has come up with an outline specification.

It will be a 32-page book in a burgundy red cover with "United Kingdom of Great Britain and Northern Ireland" on the front and the familiar rubric "Her Britannic Majesty's Principal Secretary of State requests and requires" inside.

It will also have the stamp of the European Community on the cover, and more unfamiliar still, a plastic laminate printed on the outer margin in machine-readable OCR font B. (For anyone who hasn't seen OCR font B, it is as legible as any ordinary typeface, so the passport will be human-readable as well.)

What is more, it will not contain any information that is not already on the passport. This is an important point for groups like the Joint Council for the Welfare of Immigrants, which has complained in the past about various secret codes used on traditional passports.

These include innocent-looking techniques like underlining and capitalisation which have been used to warn immigration officers that the passport holder, while a British citizen, does not have the right of residence in the UK.

It was the growth of mass travel and the congestion at ports of entry which first led to the proposal for MRPs from the International Civil Aviation Organisation, which hoped to speed the immigration process for airline passengers.

Which seems reasonable enough on the face of it, so why all the fuss from MPs and civil rights people? The problem with the MRP, from the point of view of personal liberty, is that it provides scope not only for checking identities

and refusing entry to various banned categories, but also rapidly to extend the scope of these categories if circumstances demanded it.

For example, in a time of war or political crisis, it might seem expedient to restrict travel by, say, citizens of foreign extraction, political activists, or even members of legitimate opposition groups.

Furthermore, although present plans do not envisage this, there is a possibility of a large, integrated computer database which could keep track of the movements of certain categories of quite innocent citizens over a number of years, or even of all citizens. This information would, moreover, be available to other government departments such as the Home Office, Customs and Excise and the Inland Revenue.

This is not the purpose of the MRP at the moment, any more than it was the purpose of the DVLC computers in Swansea to provide information about car owners to the police on matters that had nothing to do with car ownership. Yet this is now one of the routine functions of the DVLC.

**"The only place UK citizens will be able to use MRPs for some years will be the UK"**

Although governments justify passports on the grounds that they assist their own nationals to cross frontiers, to seek consular assistance and to identify themselves to banks and foreign authorities, there are some MPs among them who question the need for passports at all. Before 1914 they were not obligatory except for entering about half a dozen countries, and anyone popping over to Boulogne for the day would have been outraged by the idea.

During the First World War, Defence Of The Realm regulations made passports compulsory for any British national travelling outside the UK, and the system was retained after the war.

Unlike the original passport, which was a printed personal reference, signed by the sovereign himself, the document became an instrument of social monitoring and control. Even today there is no basis in Statute or case-law for passports, and technically you can enter or leave the country without one, provided you can establish your British citizenship to the satisfaction of the immigration officer.

At the moment, immigration officers check any passports they are dubious about against a manual "suspect list". Heathrow Airport is currently trying out a suspect list held on a microcomputer, but the principle is the same.

The function of the MRP will be to allow all passports to be checked against such a list. Indeed, since the Foreign Office does not intend to check passports against a central database of all valid passports issued, this will be the only function of the MRP, apart from the purely mechanical one of making sure all the details are actually present on the passport.

MPs like Frank Hooley, George Poulkes and Anthony Grant are unhappy about the possibility of extending the suspect list. They have also wondered aloud about the possible extension of the

system to keep track of all citizens, and about the availability of the data to other government departments.

In its report on MRPs the Commons Foreign Affairs Committee finally concluded: "We are not convinced that the MRP is a desirable innovation or that public money should be spent on its introduction."

"In the light of current public concern about privacy and data protection we believe that action on this project should be suspended."

Rather surprisingly, the National Council for Civil Liberties takes a less hostile position. General secretary Patricia Hewitt says: "We are not against MRPs as such. Our concern is that they should not contain information that people cannot read and that their use should be overseen by the Data Protection Registrar."

But, as Hewitt observes, the government proposals for such a registrar are extremely vague and will need considerable beefing up before anyone is happy about the monitoring of the MRP project.

In a printed reply to the report of the MPs the Foreign Office flatly rejected the criticisms, repeating its arguments that MRPs would speed up immigration control, that other countries were introducing MRPs, and that British travellers would be "left behind". Finally, the clincher, that British industry would lose export opportunities for the new equipment if plans were delayed.

Taking the arguments one by one: firstly, if all passports are religiously inspected it will certainly take longer than the present system where most people are simply waved through.

As Frank Hooley, MP, points out: "My experience is that British people are simply passed. Are you really going to save much time by this machine-readable exercise when most other people will actually not have an MRP?"

Hooley is right about most people not having MRPs, which raises the FO's second argument that "other countries are working towards MRPs". In fact the only major country even experimenting with the idea is the US, which has a pilot system called TDIS in Washington.

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Finally, there is the Foreign Office bludgeon about export orders, backed with the claim that prototype terminals are already on trial by the Department of Industry at various ports. In fact, the DoI denies that any such machines exist, far from being on trial anywhere.

It seems that in its eagerness to promote the MRP, the Foreign Office is not being completely frank about it. Even if the equipment, did exist, there are still no countries apart from the US with advanced plans for the MRP and the US is not anxious for its aid to buy British computers.



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Home computing  
Small business systems

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Name: \_\_\_\_\_  
Position in Company: \_\_\_\_\_  
Company: \_\_\_\_\_  
Address: \_\_\_\_\_

**Midland Computer Fair**

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Please send me details of exhibiting at Compec Wales.

Name

Job Title

Company

Address

Signed

University College Cardiff



## Shugart launches 3.5in Microfloppy disc drive

SHUGART Associates has introduced its new generation of rotating storage devices with the announcement of a 3.5 inch Microfloppy disc drive. It is available in this country through CPU Peripherals.

Occupying about a quarter the volume of a standard Minifloppy, the single-sided SA300 is well suited for desk-top and portable computer applications where high capacity in a small low-cost package is required.

Designed to operate with the 3.5 inch cartridge media format proposed by the Microfloppy Standards Committee, formed in May 1982 by 19 leading disc drive and media manufacturers, the SA300 provides 500 Kbytes of unmatted capacity, 135 tracks-per-inch (TPI) density and six-millisecond track-to-track access time.

"Demand for the Microfloppy should match the accelerating growth of desk-top and portable computer systems markets," according to Dr Yoshi Narahara,

general manager of the independent venture unit within Shugart responsible for the Microfloppy programme.

"The SA300 offers the same performance and capacity as a Minifloppy, but provides the additional benefits of much smaller size, lighter weight and greater application flexibility through lower power consumption," Narahara said.

Since Microfloppy drives will address many new product applications, including consumer-oriented portable computers, maximum protection of the media is essential, particularly as the diskette is small enough to fit into a jacket pocket.

The SA300 was designed to operate with a diskette protected by a hard plastic shell. Also, the shutter covering the data access window is a spring-loaded design which remains closed until the media is inserted into the drive.

When the media is withdrawn, the shutter automatically closes

over the window. This design protects the media from such potential contaminants as dust, dirt and fingerprints.

Shugart endorses the 3.5 inch size because it is large enough to hold one Mbyte of capacity without overtaxing existing technologies. Also, with 80 tracks per surface and a 300 rpm rotating speed, the SA300 achieves the same transfer rate as a Minifloppy - 125 or 250 Kbytes/second in single- or double-density respectively.

With an identical transfer rate, the SA300 can be integrated into existing systems without affecting the substantial investments in software and controllers. Shugart plans to announce a follow-on product later this year.

The SA300 measures 1.60 inches high, four inches wide and six inches deep.

CPU Peripherals (CW), Rodd Industrial Estate, Grevett Avenue, Shepperton, Middx TW17 8AQ. Tel: (09322) 46433.



The Powquip anti-glare filter helps eliminate reflections on VDU screens.

## Filter helps solve glaring problem

POWER Equipment has introduced a new type of anti-glare filter which is claimed to eliminate reflections on VDU screens to create a sharper, clearer image. It costs £35 + VAT.

Many recent surveys have shown that VDU operators fre-

quently suffer from eyestrain. There is no way of completely eliminating this problem, but an anti-glare filter fitted over the screen will prevent annoying reflections from lights and windows.

Using a Powquip filter, text is easier to read because most of the

light coming from the screen, generated, and not reflected, the contrast between the characters and the background is greatly improved, says Power Equipment.

Power Equipment (PE), Kingsbury Works, Kingsbury Road, London NW9 8UU.

## Seed DBMS for Gould 32-bit minicomputers

GOULD SEL has announced availability in the UK of the Seed database management system for its range of 32-bit minicomputers.

With this launch GOULD SEL claims it now offers the UK user the three most widely used database management systems: the Seed database system developed by International Data Base Systems which offers exceptional power, ease of use and full interaction; the Rapport relational database system developed by Logica, which offers full interactive operation combined with ease of use; and the Total database system developed by Cincom Systems, which is widely used throughout the world and enables the user to incorporate his database directly into his own Fortran routines.

Seed is a Codasyl-compliant network database management system. It allows a user to work directly with the content, rather than the physical representation of the data. This is different from the way in which data is used in different ways, depending on their applications. It allows that more schemes and schemes have been established, and users can retrieve information without knowing how or where it is stored.

It also increases program productivity by removing the need to define and manipulate files in each application. Seed uses a relational-like query language which exceeds Codasyl specifications.

Seed has been successfully used in a wide range of business, government, academic and scientific applications.

GOULD SEL Computer Systems (CW), Rafferty House, 24 Court Road, Sutton, Surrey SM4 4SY. Tel: 01-643 8820.

## Data comms tester can find faults on terminals

A NEW data communications test set, the Electrodata CTS-2, will find faults on computer terminals, peripherals, data communications links or any part of a computer system. Available from David Bisset, the CTS-2 is aimed at computer users and at suppliers of computer systems or peripherals. It is especially suitable for first line servicing, says the company.

The tester is claimed to be the world's first hand-held battery-operated data communications test set with full data storage capabilities. Data can be captured then analysed later since the CTS-2 has send and receive buffers which each hold up to 1023 characters.

Weighing less than three pounds (1.3kg), the tester replaces bulky

powered instruments yet provides a formidable range of capabilities: bit and block error rate tests, test with POX and user messages, test distortion and delay measurements.

The CTS-2 is compatible with both full and half duplex synchronous, HDLC (high level data link control) and asynchronous systems. Data can be displayed in Ascii, EBCDIC or hex codes on the LED alphanumeric display.

The tester will reduce system downtime by diagnosing faults on computers, CPUs, terminals, printers, modems and multiplexers.

David Bisset (CW), 52 Lane Lane, Redbourn, Herts AL9 7FY. Tel: (058285) 2637.

## Low-cost IBM compatibility

TWO terminals which replace IBM 3270s at half the cost are available from General Audio and Data Communications, part of the UK communications group, CAE.

The ICOT 700 and 701 match the keyboard and features of the two applications. They also allow time to be shared at the same time. All general sizes supported by IBM are handled.

Together, these features eliminate the need for separate terminals. Menus are displayed on a screen to help the operator set characteristics such as line speed, image intensity and display size. Diagnostics routines are provided to check the keyboard, screen, memory and printer.

The terminals run with General Audio's ICOT 352 controller, which can serve 12 units.

General Audio and Data Communications (CAE), Alton Street, Tring, Herts AL21 1AA.

## Intelligent graphics take strain off system

THE latest colour graphics system from Megatek, the 7600, is said by distributor Terminal Display Systems to bring a dramatic increase in local intelligence.

"The 7600 employs multiple high performance processors for complete graphics versatility," said TDS managing director Bob Astley. "Its increased power and intelligence reduces the drain on the host computer, because these dedicated processors perform all the calculations for complex transformations."

"Local intelligence also manages display lists, event queues and interaction, which further frees the computer."

A dual user capability option is available to offer advanced workstation features, he added.

The processors include a user-programmable 16-bit microprocessor in a local intelligent front-end module, graphics processors, 3D surface processor, 3D transformation processor and clip processor.

Totally interactive real time rotation of 3D objects in 16 of 4,096 colours is another innovation, says TDS. Three-dimensional surfaces of up to 600 sides can be filled instantly; 2D and 3D transformations are easy, so that the user can consider his product from every angle and point of view,

according to the company.

Either a 512<sup>2</sup> or 1,024<sup>2</sup> resolution can be selected in a raster system, or a 4,096<sup>2</sup> in vector. With a write speed of better than 160 nanoseconds/pixel, and high-speed parallel communications or serial for greater distances, the 7600 offers total dynamic real time graphics on a completely flicker-free scan, says TDS.

Application areas cover mechanical and electrical engineering, simulation, CAD, military command and control.

Terminal Display Systems Ltd (CW), Phillips Road, Whitebirk Industrial Estate, Blackburn BB1 5TH, Lancs. Tel: (0254) 676921.

## PDP-based device speeds tele-ads

TELEPHONE advertisement management system based on the PDP-11 has been launched by DEC distributor Computer Applications Ltd (CAL).

Developed by CAL's software development team, the new system, called Billboard, is said to speed up the production of classified advertisements and automatically invoices the advertiser.

The operator sits in front of a terminal and takes incoming calls over a headset. The screen prompts the operator with various questions for the subscriber: a

selection of classifications, the styles available within each classification, column centimetres available, and so on.

The operator keys in the subscriber's response to these prompts and the software configures the advertisement on the screen in accordance with these responses. Running totals of cost and column centimetres are also displayed.

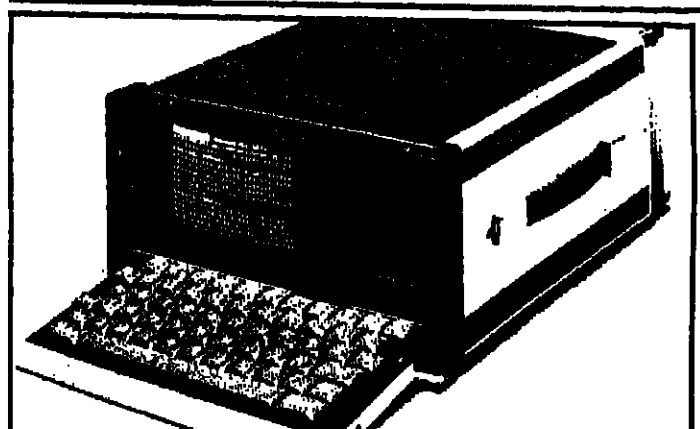
The copy is typed in by the operator via the keyboard. Again, the cost is displayed as the length of the text increases. Preparing the text in this way allows the operator to correct errors at once, and the

final version can be read to the subscriber; alterations can be readily incorporated if necessary.

Once the subscriber has accepted the ad, a hard copy is produced for typesetting.

Billboard has a multi-edition capability - the same advertisement can be placed in different papers published by a newspaper or magazine group - and long-running advertisements coming to an end are highlighted by the system.

Computer Applications Ltd (CW), 14 Ashfield Road, Chorley, Lancs PR7 1LH.



Aughton's portable Microprol 15 industrial terminal.

## Rugged terminals can be used as standalones

A RANGE of four rugged, compact industrial terminals for use in harsh environments has been introduced by Aughton Microsystems.

The Microprol range is easy to service, says Aughton, and has been designed for both OEMs and end users for interfacing to remote computers or equipment.

All the terminals have an integral, fold-down keyboard and are available in customised versions. The terminals incorporate an advanced microprocessor which allows features not normally avail-

## Half-height 5¼ inch drives 'equal full size'

TANDON has announced a family of half-height 5¼ inch floppy disc drives that equal, it says, the capacity and performance of full-sized 5¼ inch drives.

Jugl Tandon, chairman and president, says: "Two of our new TM55 Thinline drives can double the memory capacity of word processors, small business systems, and intelligent terminals, yet occupy the cabinet space of one standard-sized drive. Our new

half-height floppy is especially practical for emerging portable and instrumentation systems."

Production units, available now, are initially being manufactured in Chatsworth, California. The TM55 is priced at less than \$200.

The TM55 series is an expansion of Tandon's 5¼ inch floppy drives.

Tandon Corp (CW), 20320 Prairie Street, Chatsworth, CA 91311, US. Tel: (213) 993-6644.

## Hard disc helps with boring jobs

FOR boring long documents and large records such as mailing lists, Computecorp has introduced a 15-Mbyte hard disc.

With a capacity of about 7,500 A4 pages of text, it is intended primarily as a file processor on networks.

Up to three of these Winchester discs can be incorporated in one system to give 45 Mbytes online capacity. It can be used as the basis of a local area network, to run several terminals, or as an extra large capacity standalone word and data processor.

One of these new 15-Mbyte information processors, designated 686, has plenty of room for the million-word Computecorp Correct Spell dictionary. Used for this purpose, it has an application in multi-lingual organisations.

In this configuration, as well as having fast access to as much as 22,500 pages of text, an operator also has 320 pages available on floppy disc.

Processing of large volumes of text or data are made easier, says Computecorp, with the autopilot feature, which stores keystrokes for any routine an operator wants.

Once stored, a routine can be carried out at any time on a single command. Repetitive keystrokes and procedures are thus eliminated in otherwise time-consuming and boring jobs like generating multiple reports and a mass of personalised letters.

One of these new 15-Mbyte information processors, designated 686, has plenty of room for the million-word Computecorp Correct Spell dictionary. Used for this purpose, it has an application in multi-lingual organisations.

Computecorp (CW), Cuningham House, Westfield Lane, Kenton, Middlesex HA3 9RD. Tel: (01-907) 01981.

## Printer has a variety of applications

THE DPS200B, a nine-wire dot matrix printer featuring a maximum print speed of 200 characters per second with high resolution, is available from Fujitsu. The printer is suitable for a broad spectrum of applications as a terminal or hard-copy unit, says the company.

A wide variety of print capabilities is possible with the DPS200B. They include label printing, and graphic output. Up to 64 custom designed characters can be added to the standard.

Fujitsu Europe Ltd (CW), 34 Jermy Street, London SW1.

## In-between sized printer

THE Mini 136, a new printer concept from Russet Instruments, had its UK launch at Compec '82.

The Mini 136 handles tractor friction or single sheet stationery up to 13 inches wide, so it can print 132 columns at 12 cpi. It also fills the slot between wide body machines and the 80-column, 10in units.

It is also said by Russet to be the only printer in its class to offer an automatic paper control. This is in the form of a roller, which can be engaged under software control, to cut single or multi-part stationery over the entire carriage width.

The minimum paper height which can be cut is approximately one inch, rendering the printer suitable for docket and ticket printing applications.

Offered as standard is a wandering keypad for manual forms control, self-test and paper cutting.

The prior rate is 120 cpi in 9x7 matrix draft quality font or 50 cpi in an 18x18 matrix near letter quality matrix. In both instances printing is bi-directional and logic seeking. The paper feed rate is 36 lines per second.

A parallel interface with hand shake and error lines is standard, as is forms control and plotting capability. Options include RS232C/423 or IEEE interfaces.

Russet Instruments Ltd (CW), Unit 1, Nimrod Way, Nimrod Industrial Estate, Reading RG2 0EB, Berks. Tel: 0734 868147.

## Furniture is designed to complement VT100

MODULAR office furniture designed for use with VT100-family video terminals and complementary hardcopy terminal stands have been introduced by Digital Equipment Co of the UK.

The furniture includes a split-top, adjustable table, fixed-height work tables, a mobile diskette file and a free standing copy-holder. It has been designed for ease of use and space efficiency.

Designed by ergonomic specialists, the furniture has adjustable elements to reduce neck and back strain.

Stands designed for DEC's LQ02 letter-quality printer, Letterprinter 100, Letterwriter 100, and Correspondent printers and terminals complement the modular furniture. Stands for the LQ02 and Letterprinter 100 can take acoustic covers.

Digital Equipment Co Ltd (CW), Digital Park, PO Box 110, Reading RG2 0TR. Tel: Reading (0734) 868711.

draw commands, text strings, areas, and pen and fill commands. Representing such complex graphic entities in a single element reduces the amount of data to be processed and the associated requirements for memory and data output. No changes in application programs are required.

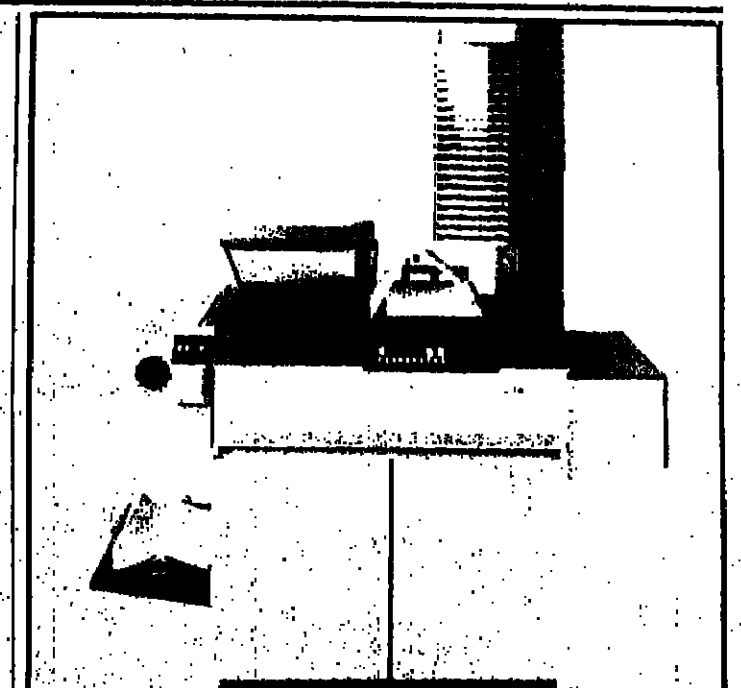
The 780-13 controller, which does not accept Random Format, is priced at 40% less than the 780-11, and can be easily field upgraded, says Versatec. The 780-13 can accept and process data in Versatec compressed raster, blocked raster and EBCDIC print formats. Compressed raster typically re-

duces data requirements over raster by as much as 20:1. Data ordering, rasterisation and data compression are performed on the host.

Two electrostatic plotting software packages are available. Versa-plot Random enables users to define pens, fill areas, and process Ascii strings. Other data formats are supported by Versaplot 7.7 software integrated for IBM OS, OS/VS and VM/CMS.

The 780-11 is priced at £13,344, and the 780-13 at £7,358.

Versatec Ltd (CW), 27-35 London Road, Newbury, Berks. Tel: (0635) 42421.



The Océ 1900 forms feeder makes 45 copies a minute.

## Output copied to fancy paper

A SYSTEM for photocopying computer listings has been introduced by Océ Copiers.

The Océ 1900 CFF system is integrated into the Océ 1900 copying system to allow reproduction of a variety of originals on to a wide range of paper specialty materials, in addition to the computer forms copying system.

Designed for 8,000 to 80,000 copies a month, the 1900 series reproduces 45 copies a minute and has a capacity of 1,100 sheets. The 1900's toner transfer fusing system allows the use of a wide range of materials, says Océ.

Océ Copiers UK Ltd (CW), Langston Road, Loughborough, Leics LE11 3TH. Tel: 01-502 1951.



VDUs, printers, plotters, memory products, graphic displays, tape and disc drives - all the latest equipment you need to see will be featured at Peripherals 83. Sponsored by Systems International in association with the Peripherals Suppliers Association, the show is larger than ever before. This is the ideal opportunity for those requiring computer peripherals to discuss their needs with specialist suppliers.

February 2-4, 1983

10.00-17.30 (closing 16.00 on the last day)

Cunard International Hotel, Hammersmith, London.

Admission by business registration, is free of charge. Plan your visit now

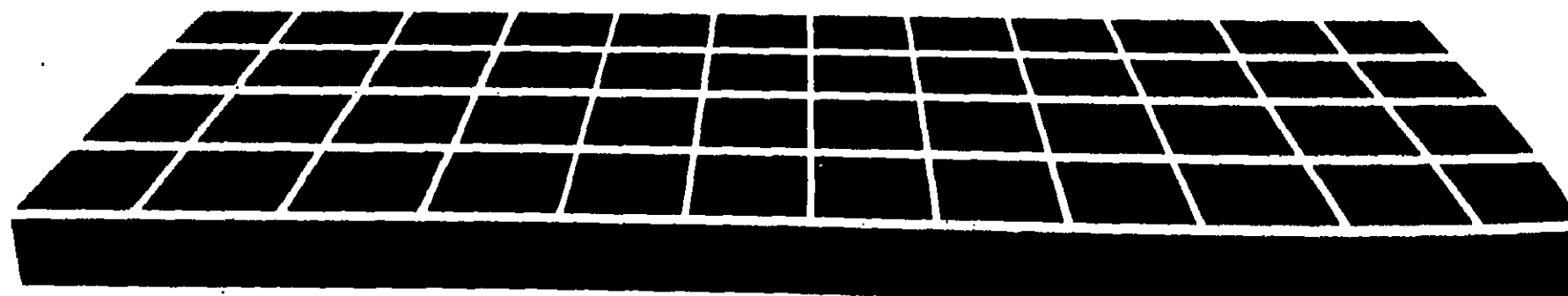
Visitors to the exhibition will also be given the opportunity to attend seminars organised by the Peripherals Suppliers Association. Details of these should be obtained in advance from: Mrs. Helen Gibbons, Peripherals Suppliers Association, Owles Hall, Buntingford, Herts. SG9 9LP. Tel: 0763 71209

For further details please contact: The Exhibition Manager, Peripherals 83/84 Exhibitions Ltd, Surrey House, 1 Throby Way, Sutton, Surrey SM1 4QQ. Tel: 01-643 8640



ANNOUNCING

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# PERIPHERALS PREVIEW

## Shop window for the nuts and bolts suppliers

John Kavanagh sets the scene for next week's exhibition in Hammersmith

A WORKMANLIKE show where users and systems houses can visit nearly 50 manufacturers and distributors of terminals, printers and data storage products - that is the Peripherals 83 exhibition, which this year moves to London's Cunard International Hotel in Hammersmith on February 2, 3 and 4.

The show is backed by the Peripherals Suppliers Association and Computer Weekly's sister publication, Systems International. It is run by Compec organiser IPC Exhibitions.

The show holds few surprises in terms of major product announcements; its main benefit is that it enables visitors to see a lot of suppliers of the basic nuts and bolts of computer systems in a short time.

Two mainframe manufacturers - ICL and Honeywell's Italian company - are among the exhibitors, showing peripherals for systems houses rather than computers.

Honeywell Information Systems Italia is showing for the first time in the UK its matrix printers. They range from units running at 100 characters a second for office microcomputers to a 14-needle printer with a speed of 400 characters a second. Honeywell says this gives the fast printer a throughput comparable to that of a line printer running at 250 lines a minute.

ICL OEM Sales, formed nine months ago, has one of the three biggest stands at the show, a bold contrast to its low-key Compec debut in November. ICL buys large numbers of printers and displays for inclusion in its own systems and thus gets good discounts. The

new OEM sales organisation sells a proportion of these products on to other OEMs, making a profit but still able to offer a good price.

Two Japanese products are on show at Peripherals 83. The display terminal used in ICL's Personal Computer and made by a relatively small company, Kokusai, is claimed to offer more facilities than equivalent low-cost units.

These facilities include screen editing, full block and line graphics and the ability to select communications features and character sets for 12 of the world's main languages by setting external switches.

The other product is the Ricoh printer family, including the RP1600 correspondence printer and a new low-speed and lower-cost version. Also new at the show is an RS232C standard interface for the printers, specified by ICL. Again, communications features and character sets can be selected through switches.

ICL says this enables distributors and systems houses to leave installation to users themselves if necessary. The company adds that all devices bought in go through quality and reliability tests similar to those faced by ICL's own products.

Opposite ICL and matching it in stand size is Newbury Data Recording, formed last May from the merger of two associated companies, Data Recording Equipment and Newbury Laboratories, and now claimed to be the UK's biggest peripherals manufacturer.

The company, owned by the National Enterprise Board, has 625 staff and a turnover approaching £30 million. It covers

the peripherals market, building printers, display terminals and disc drives. The latest products include an 80-Mbyte disc drive, eight-inch and 5.25-inch Winchester fixed disc drives, matrix printers including a two-head, 300-lines-a-minute unit, plus terminals for IBM 3270 and Honeywell 7800 users.

These last two products, launched at the end of last year, mark a new departure for the company, for they are bought in Newbury Data points to the need to move quickly when a good opportunity is spotted. "If you can develop the product quickly, that's fine; otherwise you look for a good established product," says marketing manager John Pether.

He adds that the IBM 3270 market in particular is always strong because users are constantly replacing terminals installed five or six years ago. The Newbury Data product undercuts IBM by 25%.

Of the handful of companies using Peripherals 83 as the launching pad for products, the distributor Pragmas is showing the latest model in the heavy-duty printer range from the US manufacturer Data Printer. The new bandtrain unit runs at 1,500 lines a minute to top off Pragmas's line printer family, which starts with 600-lines-a-minute devices. Prices go from £6,150 to £9,200.

Lower down the scale Pragmas has the recently-introduced document printer from the French manufacturer IER. This unit is suitable for letters, statements and passbooks. It takes paper of up to A4 size and automatically adjusts itself to handle forms of thicknesses of up to 2.5mm.

Another printer in the family takes single sheets and is intended for applications such as labelling shelves.

Other printer suppliers on show include the distributor Sintrom Electronics with the fruits of an agreement signed with the US manufacturer Dataproducts last year: daisywheel, matrix and line printers running at up to 600 lines a minute. And Access Data Communications is showing Facit matrix printers for the first time following a £500,000 distribution agreement signed at Compec in November. Access also sells daisywheel and matrix printers from Qume and Newbury Data Recording.

These companies will be competing with manufacturers and distributors such as Anadex, Data Dynamics, Penny and Giles Computer Peripherals, Technology for Business - formed from a management buy-out of the French manufacturer Logabax's UK subsidiary - and Telprinter Equipment, with a microcomputer matrix printer offering quality approaching that of a daisywheel but at under £500.

Another main product launch is in the storage media market, where the UK manufacturer Microdata is introducing a portable data recorder said to be the only one of its kind to be completely self-contained.

The device can run from its own battery, from a 12-volt supply or from the mains. It measures 10 inches by six by 10.5 and weighs 10lb. It uses standard 0.25-inch cartridge tapes and has standard recording formats and interfaces. It costs £2,050.

Elsewhere Winchester disc drives and cartridge tape units are the focal points, with very few companies featuring floppy discs.

Data Design Techniques aims to build on its growth in the Digital Equipment market last year with its Winchester disc systems complete with floppy drives for back-up. The company's 31.2 Mbyte eight-inch system can be bought with installation services and a warranty from DEC itself.

A controller board, which can be supplied separately, can handle a full Winchester and back-up system, including two 40-Mbyte drives, two floppy discs and a cartridge tape unit.

Other suppliers include the US manufacturer Kennedy, with a new actuator which improves head positioning and cuts power demands and heat, and distributor Euro Electronics, which sells the Cynthia range from the French company CII Honeywell Bull. The range includes 5.25-inch Winchester



PERIPHERALS 83 runs from February 2 to 4 at the Cunard International Hotel, Hammersmith, London. It is open from 10am to 5.30pm on Wednesday and Thursday and from 10am to 4pm on Friday. The hotel is in Talgarth Road, near Hammersmith Tube Station. There is ample car parking space at the hotel and there are other car parks within walking distance.

## List of exhibitors

Access Data Communications	L48	IGG Electronics	L60
Ambitron	L9	Intertrade Scientific	L6
Anadex	L69, L70	Kennedy International	L44
Andrews Industrial Equipment	L75	Lambert Computing	L5
Cifer Systems	L4	Matrox	L74
Computer Terminals Services	L19	Microdata	L76
Coscor Electronics	L1, L2	Mutek	L50
Data Design Techniques	L14	Newbury Data Recording	L20, L30, L32
Data Dynamics	L66	Northamber	L21, L22
Data Track Technology	L51	Osley Development	L17, L18
Data Type Terminals	L58, L59	Penny and Giles	L61, L62, L63
Decade	L28	Power Tasting (Sales)	L3
Dilog International	L11, L12	Pragmas	L64, L65
Euro Electronics	L46, L47	Quality Systems International	L55
Farnell Instruments	L72, L73	Sintrom Electronics	L42
Feedback Data	L40	Technology for Business	L71
Gould Bryans Instruments	L15	Teleprinter Equipment	L24, L25
Graham Lion	L54	Thorn BMI Data-tech	L26, L27
Hawke Electronics	L57	3M UK	L38
Honeywell Italia	L7, L8	Veratec	L38
ICL OEM Sales	L33, L34, L36	Vikingshaw Products	L10
IRC Engineering	L49	Walters	L72
		Microsystems	L72



Flashback to Peripherals 82.

## Seminars on graphics, terminals and storage

THREE of the main themes running through the Peripherals 83 exhibition - graphics, terminals and data storage - are the topics for seminars held at the same time as the show.

The first day covers graphics, with papers on colour hard-copy devices, laser printing and plotting and the implications of the new generation of 'master' terminals, which offer more built-in memory and processing at relatively low cost compared with traditional graphics terminals.

Day two starts with papers on the use and implications of terminals in consumer locations such as shops and libraries and on the factory floor. Other speakers examine trends in the features and roles of display terminals. The day is

rounded off by talks on two hot topics: local area networks and fibre optic communications.

The last day, on storage, is for computer product manufacturers and systems houses rather than users. Two speakers review the techniques and technologies involved in making high-density storage media, while the third paper in this morning-only session covers applications for 3M cartridge tape systems in data logging.

The seminars run from 11am to 1.15pm and from 2.30pm to 4pm

on day one, from 10.30am to 12.45pm and from 2pm to 4.15pm on day two and from 11am to 1.15pm on day three.

The cost is £10 plus VAT for each day or £25 for all three days. Visitors can pay at the door. The papers are mainly by people from companies belonging to the Peripherals Suppliers Association, including Sintrom, Veratec, Delta Data Systems, Pragmas and Kennedy.

Further details can be had from the association. Telephone (0753) 71209.



ICL's Personal Computer. The display is now sold as an OEM product.







# More choice for IBM users — if PCMs keep their word

Kevan Pearson reports on the state of play in the IBM disc market

LAST year was the year of the disc. At least it was the year of the IBM disc. In August, IBM finally began to ship its 3380 2.5 gigabyte flagship disc system to Europe after a delay of over 12 months — a delay which cost IBM millions of dollars.

Added to this, two companies entered the IBM disc business for the first time.

The first of the newcomers was IBS Systems, a company formed specially with the intention of rocking the existing disc makers. It announced three products which were under development: a top system with twice the capacity of IBM's 3380; a device to take the 3380 head-on; and half capacity disc. All would use the same head-disc assembly technology, and that technology would be very different from that adopted by IBM and the remainder of the plug-compatible disc manufacturers.

IBM's 3380, and the other offerings, use thin film heads, with conventional ferrite platter coatings. This took the opposite route: thin film coatings and normal ferrite read/write heads. The company claims several advantages for this set-up.

The company has maintained a presence in the market with the 3350 compatible 3350 and double density 3352 products. But these are relatively old technologies, and outside the US CDC's sales operation in this field has been low key, and sometimes non-existent.

In 1982, however, the company gave notice of a major change in its IBM-compatible activities. Firstly it announced the 3380 series, and there are no prizes for guessing where it is aimed. Then it unveiled the 3370. Again no surprises in the product, except that it is hardware compatible with the 3380.

This could provide a major marketing advantage over CDC's rivals. CDC is the only IBM-compatible company to offer it.

Couple this with the company's search for a suitable method of distribution for these products and there could be troubled times ahead for the other contenders, as users are faced with a much wider choice of non-IBM IBM compatible discs.

And what of the established IBM compatible disc companies? BASF was the first company to reveal its plans back in 1981 when it announced a range of three products to compete with IBM's 3370, 3375 and 3380 drives. It obviously did not expect the problems IBM subsequently had with all three systems.

BASF's products, like those of NAS, are made by Hitachi, as are the mainframes that the company sells, though peripherals sales remain its most successful product operation.

STC announced two products, the 8370 and the 8380, directly competitive with IBM's 3370 and 3380 models, and based on the same thin film read/write heads — conventional ferrite platter technology employed by all the other products, including IBM's with the single exception of the as yet unproven IBS designs.

Memorex also announced two products, like those of STC, directly competitive with IBM's products. The Memorex announcements are interesting in that the 3690 — the company's 3370 product — heralded Memorex' entry into the small systems end of the market. This product is probably more important to Memorex than its 3680. It is the company's first foray into the fastest growing segment of the IBM mainframe market — 14300s.

The 3680 follows the familiar pattern of technology and price/performance posturing of the other PCM disc makers. When it was announced, Memorex managing director Mike Kitching described it as the most significant in his six years' tenure as head of the UK operation.

Before any competitive 3380 products are delivered (most are expected in the first half of 1983) IBM drew the battle lines for the fight. It announced price cuts and volume purchase discounts on both the 3380 and 3380 controller for the US, and it is expected to follow suit in Europe soon.

The December price cut amounted to about 15%, which must have caused some consternation among the other PCMs as they would have been pitching their products at between 80% and 90% of IBM's list.

STC's downs occurred not so much in its disc activities, but in two other developments. Firstly it dropped its VS Virtual Storage system which was designed to make better utilisation of storage space on discs. The company claims that VS was dropped because of up and coming developments in laser disc technology which will make disc storage so cheap that a low space

utilisation will not matter.

STC's second bit of bad news was that the Documentation laser printer it was developing and hoping to launch last year was also killed off, again because it had been overtaken by market developments. On the plus side, it claims that its plans to build large IBM compatible mainframes are going according to plan, and are on schedule for the 1984 deadline.

Two areas in the IBM peripherals market remain undecided, waiting for IBM to signal its moves. The first is in tape subsystems. A number of products exist which can easily outperform venerable IBM 3420 tape subsystem.

IBM needs to announce something in this market soon since its existing products cannot match the performance characteristics demanded by modern processors with data streaming channels.

Speculation has been mounting about IBM's as yet unannounced "Ocatillo" tape system, and it is expected soon, possibly in spring.

The other product which people are awaiting is the replacement for IBM's ageing 3705 communications controller.

There is just one thing missing from the IBM peripherals jigsaw now, and that is either a 3270 terminal replacement and/or a terminal protocol emulator for the Personal Computer.

1982 marked a considerable increase in the amount of choice users will have in the future, if all the promises made by the companies concerned come to pass. We have already seen the first fruits of the anticipated increase in competition at the top of the disc market; IBM's 3380 price cuts. Now the industry is waiting for the PCMs to keep their side of the bargain.



KITCHING... "Most important product in my six years at Memorex."

It's a picture.



## BOOKS Rise of the all-seeing machine

Machine Perception. Ramakant Nevatia, Prentice Hall, £22.40.

THE FIRST time ever I saw a computer it wasn't a computer at all: it was an optical character reader. OCR machines were the fastest means of inputting general raw data in the 1960s, and still are.

But the relative expense of OCR technology, and a market distorted by capital investment in punch cards and keyboards has prevented the take off of what is now a quite mature technology. This, indirectly, is what Nevatia's book is about.

He describes the blossoming field of application, and some of the problems, of having machines which can see. He means the word in a very human sense, and the parameters of consideration are bounded by the notion that what we, as humans, see is the world.

Not unnaturally, perhaps, there is not a great deal of mileage in pursuing the technologically more sympathetic "compound eye" of the insect, since we don't know "what" the fly sees, or how it interprets the vision. To some extent

Nevatia slides around those problems by assuming implicitly that the ultimate outcome of visual machine perception is a picture very much as we see it.

The book is heavily referenced, several relatively short chapters having up to 48 identified sources. Certainly Professor Nevatia has

proved himself against charges of plagiarism. What he may have achieved in the process is delivery of information in "a blaze of light at the speed of sound".

A slimish book that rests lightly on the thin ice of a very complex topic.

K.C.

## And it's worth a thousand words.

The brilliant new Commodore 700 is arguably the most aesthetically pleasing micro-computer ever designed.

Beauty and brains allied in the most literal sense.

Beneath the soft-sculpted lines of the 700 lies the most impressive achievement in technology from one of the world's leading micro-computer companies.

Built to a standard and to a specification which no competitor comes close to emulating, and at a price\* which makes this fact all the more remarkable, the Commodore 700 is unique.

It is a very special computer indeed.

However you care to look at it.

### SUMMARY SPECIFICATION

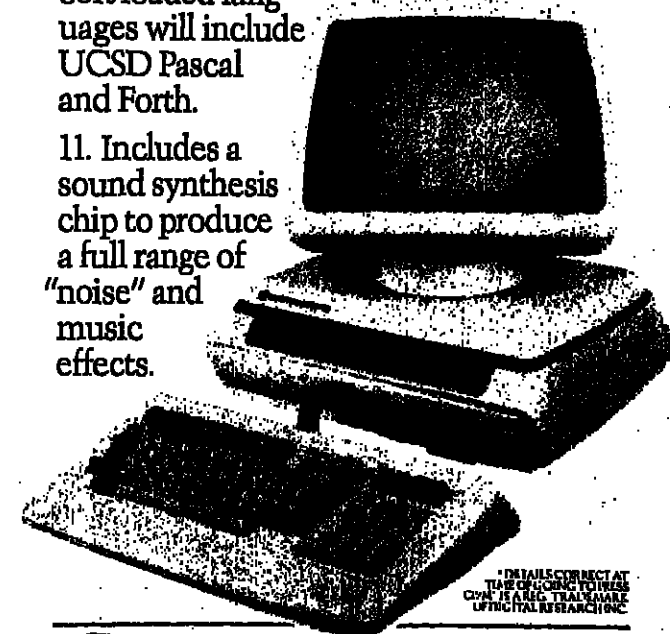
1. Tilt and swivel anti-glare 80 column green-on-black display screen.
2. Comfortable, easy-to-use detached keyboard with sculptured keys, separate calculator pad, isolated critical operation keys and separate cursor controls.
3. Ten special function keys are programmable in BASIC or machine code to execute twenty special operations.
4. Capable of addressing 896K of user RAM. Available with either 128K or 256K as standard. Configured in 64K banks with switching managed by the 6509 processor.
5. The full RAM is available for machine code programs. BASIC programs can be up to 64K in length with the remainder of the RAM available for variables and/or data.
6. Integral dual disk drives with direct memory access available as an option.
7. An optional dual processor — the Z80 or 8088 — can operate concurrently with the standard 6509. This enables access to the existing library of CP/M® programs

8. Interfaces through several ports — IEEE-488, RS 232C, CBM cassette, 8 bit parallel, and cartridge slot. Built-in networking capability.

9. Supports a full range of peripherals including dual disk drives, hard disks, dot matrix and letter quality printers, and plotters. Works with all existing Commodore systems peripherals.

10. Standard language is BASIC 4.0 plus, so existing Commodore 8000 system programs in BASIC are easily converted. Soft loaded languages will include UCSD Pascal and Forth.

11. Includes a sound synthesis chip to produce a full range of "noise" and music effects.



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For a thousand words and more on the Commodore 700, and the address of your nearest Commodore dealer, telephone or write to us at:

The Commodore Information Centre,  
675 Ajax Avenue, Slough, Berkshire SL1 4BG.  
Telephone: Slough (0753) 79292.

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## In-depth look at the real world

Real Time Languages Design and Development. S. J. Young. Published by Ellis Horwood. £29.50 (available through John Wiley & Sons).

INTEREST IN Ada, the real time programming language developed by the US Department of Defence has been growing steadily over the past few years as the computer industry awaits development of a full compiler.

RTL2, developed by John Barnes of SPL International, and Modula, developed by the author of Pascal, Niklaus Wirth, are also attracting their share of the limelight as the number of online applications increases, so this book is certainly well-timed.

The author, Stephen Young of the University of Manchester Institute of Science and Technology, analyses the structure and characteristics of all three languages in his book, as well as discussing design requirements of real time languages more generally.

In the first half of the book he defines essential features of a real time language, such as flexibility,

simplicity, readability and, most important, security, and applies these criteria to an in-depth examination of data and program structuring.

Young believes that a real time language should be capable of programming its own compiler, because of the accruing benefits if a whole project is developed in the same language, and argues that non-real time features such as dynamic arrays should be included for that purpose.

Concurrency is examined in some detail, outlining problems and likely errors, comparing alternative rendezvous models proposed by Hoare and Brinch Hansen in 1978.

The concept and structure of this book has been extremely well thought-out, and is perfect for the student. It is easy to switch from reading about a conceptual language feature in the front section to a practical illustration of it in the back and vice versa, making ideas easier to grasp and visualise.

Maggie McLening

## Why we need maths more than ever

Mathematics for Computing. G. P. McKeown and V. J. Rayward Smith. MacMillan. Hardback, £18.00. Paperback, £8.95.

FOR THE programmer or analyst in the field an in-depth knowledge of computer mathematics was until recently more likely to be a hindrance than a help.

But this state of affairs has been changed by the growing use of packaged application programs coupled with an increasing involvement in systems, graphics and CAD/CAM areas by working analysts and programmers.

Some knowledge of mathematics, therefore, is now an essential requirement for many workers in information technology.

This book is intended principally as an introduction to the subject for first year degree students in computer science. It is also intended as a reference work for analysts and programmers, despite a warning from the authors that a good "A" level in Maths is assumed. The book's clear layout and well-structured text makes it well worth the money.

Kevin Cahill

## The flowering of new architectures

Computer System Architecture. W. Morris Mano. Prentice Hall. £22.40.

THE MICRO has given us more than Space Invaders. It has led us to a point where the potential for alternative architectures in computer design has never been greater. And with this flowering of small scale potential, has come a flowering and proliferation of interest in architecture, the basic "engine" which drives a computer system.

To achieve widespread utilisation of this potential, however, requires that clear guides to all the basic constituents of computer architecture, and their working elements, should be available. Professor Mano has presented a formidable book in this respect. Although the book is intended principally for students of hardware design and engineering, probably around first year university level, the author quite fairly claims to offer a good working guide to engineers and job professionals.

Mano covers the topic from

mainframe functions through microcoding to the working principles of microprocessors and peripheral storage.

In contrast to Ibbett in his book on high performance architecture, Mano is more definitively concerned with the "how of the now" rather than the whys or whats of historic architectures. Following this general inclination Professor Mano has produced a true students' workbook.

I have just one small quibble about this otherwise excellent book. To satisfy himself that we understand what he is saying, Professor Mano has devised what he calls a symbolic register transfer language, but an accretion of dialects and accents tends to diminish understanding and dim our perceptions of the clear edges of structures.

It would be unfair to say that Professor Mano does this, but he adds to the task of understanding at the expense of maybe just trying a bit harder with existing conventions.

K.C.

## Guide to databases

Databases for networks and microcomputers. Dimitris N. Chorafas. Publisher Van Nostrand Reinhold £21.25.

MY PROBLEM in reviewing this book is that for many years I was a dedicated opponent of databases, and highly suspicious of the technologists promoting them.

What Chorafas is setting out to describe in his book, and he does it very successfully, is a world in which every network will be awash with databases. But Chorafas' advocacy of endless databases everywhere is not in tune with the direction information technology must take if it is to become the decision support system which for

instance, Robb Wilmot of ICL would like to see.

But the general argument of the book does no justice to the clear intelligent presentation Chorafas makes "within the argument" as it were.

He has produced a most valuable early guide to an inevitable development in IT. He has done it well, highlighting the likely structures to be adopted, and pointing out the urgent need for a much greater development in the area of communications standards.

For analysts and programmers who will have to deal with distributed databases, this is a useful guide.

K.C.

## Hardware directory

NCC Directory of Computing Suppliers. Published by NCC Publications. £15.00.

THIS is a companion volume to the NCC Directories of Hardware Services and Software and consists of an alphabetical list of computing suppliers throughout the country, including non-NCC members.

Unfortunately, the layout and presentation are extremely poor, probably because of the large

proudly announces in the front the information was produced by the Filetab report generator.

Little appears to have been done to modify the initial computer listing, as suppliers' details are all in capital letters with no punctuation, and the book has to be turned at right angles to be read, like a miniature printout.



# APPOINTMENTS

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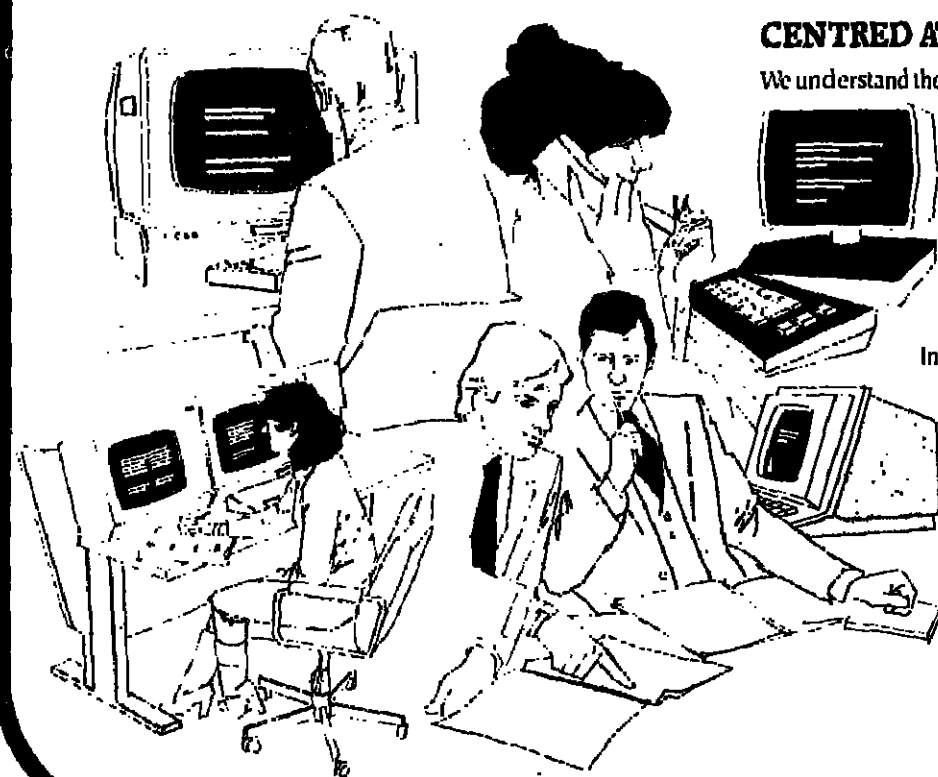
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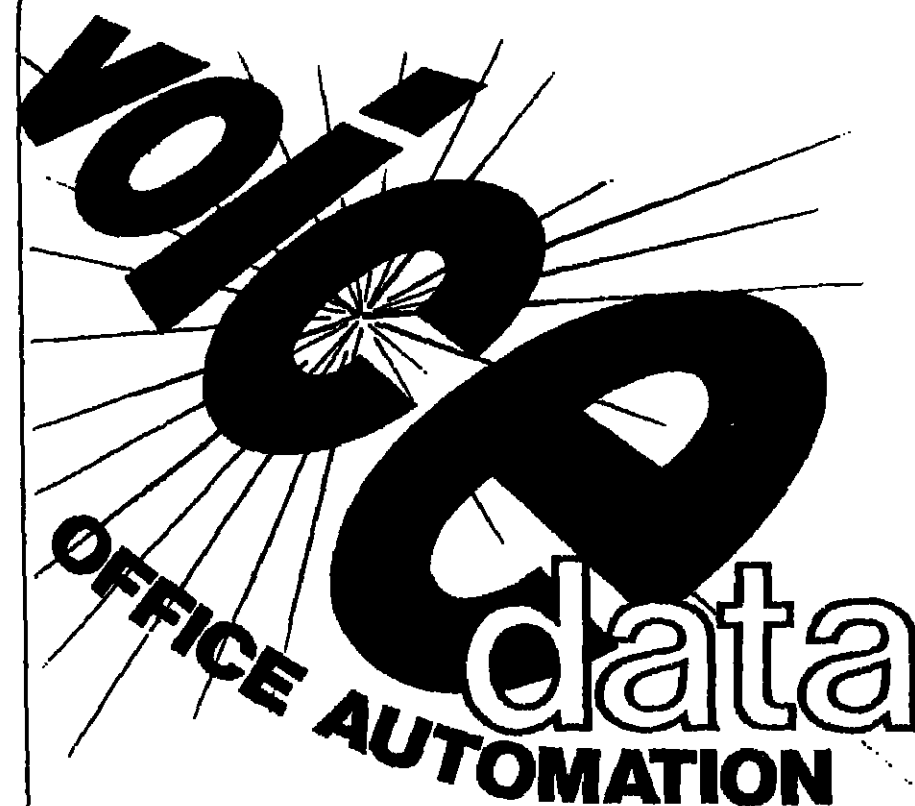
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(2394)

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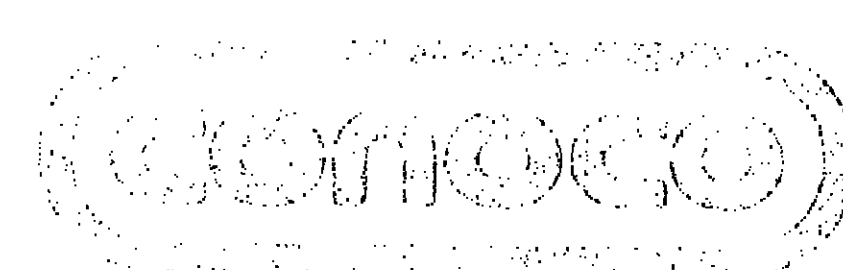
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Salary:

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Maidenhead SL6 4LD  
Berkshire  
Telephone: (0628) 23381

Not since the days of Florence Nightingale has the Nursing Profession undergone such a change.....



After more than a century of development and change, nursing midwifery and health visiting are joining together to form new statutory bodies with responsibility for one of the largest professions in the UK.

With the creation of a United Kingdom Central Council and the National Boards of England, Scotland, Wales and Northern Ireland, comes a major new information processing project to replace systems currently in use for keeping professional records of individuals. Computerisation will also be utilised for the statutory bodies in the areas of financial information, statistical analysis and central processing of applications for training places.

The production of single shared database system for this information requirement has created a necessity to recruit initially a further 3 Systems and Programming professionals. The technical and personality aspects of which are outlined below.

## SENIOR SYSTEMS ANALYST to £12K

The Senior Analyst position is critical in terms of defining and quantifying requirements identified by the Senior computing management. He or she will be able to demonstrate proven ability in project control and man-management. It would also be of considerable importance to have some fundamental programming knowledge or experience and to be able to communicate and present ideas and technical information effectively in user areas. The person will be expected to control, manage and motivate more junior systems staff particularly analyst programmers and within the database environment, the person will play an active role in data policy and deputise for the Database Administrator where appropriate.

The position offers an ideal opportunity for unique experience because the project is in its early stages, and will be one of the largest ever undertaken in this field.

## SENIOR PROGRAMMER to £9.5K

The position of Senior Programmer offers a considerable opportunity for an experienced IBM COBOL Programmer who has worked with on-line systems (and most probably in an MVS environment) to play a very important role within the newly created department. You would be responsible for junior programming personnel and will be expected to manage, motivate and direct others, in addition to providing technical training where appropriate. It is essential that you have proven ability in systems design in addition to your programming skills, as you will be picking up specifications resulting from feasibility study and analysis functions. You may be working directly to the computer management or to the Senior Analyst depending on the individual projects.

This position offers the opportunity to develop your career with an exceptionally forward-thinking group, it has all the makings of a very important career move.

## ANALYST PROGRAMMER to £9.5K

The Analyst Programmer will provide all the necessary support to the Senior Analyst in all detailed and practical aspects of the work. The person will have proven experience in program specification and user documentation and will be able to demonstrate personal skills in programming (COBOL) preferably within a large IBM Mainframe environment.

The person will have had some involvement in practical systems analysis in addition to programming.

Emphasis will be placed on communicative skills in terms of translating user specifications to computing terms, documentation and user training. The position offers an excellent opportunity for experience on an exceptional project which will have exposure to the very latest hardware and software.

## THE TECHNICAL ENVIRONMENT

Computing power is considerable, the hardware utilised will be an IBM 3083B (16 megabyte) and a NAS 240H (8 megabyte). The software environment is MVS operating under VM and COBOL is the main language. ADABAS provides the database management software and NATURAL is also used. The database is on-line using the COM-LETE TP monitor via VDU's, from the four national capitals.

## UNITED KINGDOM CENTRAL COUNCIL for Nursing, Midwifery and Health Visiting



**WARWICK WOODWARD**  
A SPAN GROUP COMPANY

43-44 GREAT WINDMILL STREET, LONDON W1V 7PA  
TELEPHONE: 01-734 7394 24 HOUR ANSWERPHONE

## HOW TO APPLY

To discuss these positions in more detail please telephone Janet Chilvers on 01-734 7394 or on 01-359 4997 evenings and weekends. Interviews will be held as soon as possible, if you are unable to telephone please complete the coupon and mail it to us immediately.

Please post this coupon to Janet Chilvers, Warwick Woodland, Freepost 37 London W1E 6UT

I am interested in these positions

Name

Address

Home Tel.

Work Tel.

Position required

Current position

Technical experience

## "I'll cross that bridge when I come to it...." ...now's your chance.

Having decided upon a move into the software areas, are you finding that things are not moving fast enough for your liking? Perhaps over specialisation or lack of opportunity to learn new techniques means that your talents are not being fully realised — or recognized.

## Software/Database Programmers c £9,000 p.a. Bristol

As a corporate entity, we rank as one of the major engineering companies in Europe with a substantial track record of successful development and manufacturing of high quality products.

As a computer installation we are one of the biggest in the UK — probably within the top six IBM sites — and utilise most of what's best in software and hardware. For a Programmer keen to develop a career within software, there can be few for on-going training and self improvement. Our IBM 3033, 3032, and 158 hardware utilises a wide range of software including COBOL, BASIC, FORTRAN, PL/I, PASCAL, and ALGOL. We also have a large number of software products in development.

We seek Programmers with a sound knowledge of software or database programming to join the teams working on the development and implementation of the interest in software programming. Around 3 years experience could command a higher salary of c £9,000 p.a., with more experienced Programmers being considered for a higher salary.

A generous relocation package is available to enable those outside the area to enjoy the substantial benefits of living and working in the West Country.

To find out more, contact our Advisors at S.C.R.

Martin Stainthorpe 021-236 3781 or 021-744 1882

(evenings until 9.00pm, or weekends).

021-236 3781 or 0827 68002

(evenings until 9.00pm, or weekends).

Ian Payne



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021-236 3781

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International House, 84 Deansgate,  
Manchester M3 2ER  
061-833 0427

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Belle 4, 1050 Bruxelles  
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Below we indicate some of the interesting and stimulating positions our clients can offer, working on the leading edge of technology. If none of these jobs specifically apply to you but you feel your experience is related, please telephone us to discuss our other requirements.

**Software Project Leaders**  
**£13,000 - £16,000**  
Herts/Beds or London or Hants

**FIVE NEW PROJECTS** for mini-manufacturer.  
Experience in any of the following: Operating Systems, Compilers, Communications, Viewdata, UNIX.

**Communications Consultants Also Designers**  
**£10,000 - £16,000**  
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SNA, System X, telephony and data transmission protocols, modem and multiplexor technology.  
For Consulting assignments, pre- and post-implementation management and project definition.

**1979/80 - GRADUATE? YOUR OWN PROJECTS IN 1983?**  
If you have a good Hons degree and sound practical experience in a technical environment we can help you.

**Production Supervisors Quality Assurance**  
**£9,000 - £15,000**  
N & W Home Counties  
Electronic component manufacture, production experts. Experience of pilot unit production control, general production supervision, quality assessment and assurance in hardware and software environments.

**Software Designers and Programmers**  
**£9,000 - £14,000**  
Southern England incl. London  
REAL TIME software developments. VAX, PDP, TANDEM, DG or Micro. Ideally Assembler or Pascal/FORTRAN.

**Development Engineers**  
**£8,000 - £13,000**  
Essex or Surrey or Hants  
Design and development of either microwave, line-of-sight, tropospheric scatter and satellite communications systems, or AM, FM and TV broadcast transmitters.

**Micro Assembler Programmer 1 Year Contract - C. £375 p.w. HOLLAND**  
To convert existing VIDEO GAMES to run on Intel 8080/8048 microprocessors.  
Keen hobbyists with relevant experience who would like to break into this lucrative and stimulating environment should also apply.

**Systems Engineers Designers and Programmers**  
**£8,000 - £15,000**  
Hants or Essex or Surrey or Cheshire  
**AIR SEA WEAPONS**  
Command and Control avionics, missile guidance, Radar Tracking and display systems.  
Assembler or CORAL, ADA, MASCOT RTL 2, PASCAL or similar experience.

**Designers**  
**£8,000 - £14,800**  
London or Home Counties  
**INDUSTRIAL AUTOMATION**  
specialising in manufacturing systems, to work on the design and development of materials handling and robotics.

For further information concerning any of these positions or to contact Jenny Dalrymple, Tel: 081-734 2547 from 9 a.m. to 5 p.m. weekdays (weekends 081-734 2547) or 081-734 2547 (evening) or 081-734 2547 (night).  
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Long interesting contracts starting over the next three months for **VAX - PASCAL**.  
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**NORTH STAFFORDSHIRE POLYTECHNIC**  
Faculty of Computing, Humanities and Education  
Department of Computing  
**PRINCIPAL LECTURER AND SENIOR LECTURER/LECTURER GRADE II IN COMPUTING**  
Salary Scale Principal Lecturer £11,000 - £13,000 (incl.) - £13,000 - £15,000 (incl.)  
Senior Lecturer £9,000 - £11,000 (incl.) - £11,000 - £13,000 (incl.)  
Lecturer Grade II £7,000 - £9,000 (incl.)  
Applications: An individual for the Faculty of Computing, who will have the general management of our software operation. The successful candidate will also take responsibility for major software development projects. Candidates should be able to teach Computing at Honours Degree and/or Higher National Diploma level. For suitable candidates there may be an opportunity to teach in the Department of Computing.  
Application forms and further details may be obtained from the Faculty Office, North Staffordshire Polytechnic, Leazes Road, Stoke-on-Trent ST4 2DA. Tel: 0902 42211. Fax: 0902 42212. Closing date: 15 February 1983.

**SOFTWARE MANAGER-EDITOR**  
SALARY PACKAGE TO £12K  
BEEBUG Publications requires a Software Manager to take responsibility for an expanding range of software titles for the BBC Microcomputer. This entails the evaluation, editing and promotion of software, as well as the general management of our software operation.  
The successful candidate will also take responsibility for major software development projects. Candidates should be able to teach Computing at Honours Degree and/or Higher National Diploma level. For suitable candidates there may be an opportunity to teach in the Department of Computing.  
Application forms and further details may be obtained from the Faculty Office, North Staffordshire Polytechnic, Leazes Road, Stoke-on-Trent ST4 2DA. Tel: 0902 42211. Fax: 0902 42212. Closing date: 15 February 1983.

Schools of Engineering and Information Sciences  
**Lecturing posts**  
(Lecturer 2, Senior Lecturer, Principal Lecturer):  
Salary ranges £7086-£11263; £10404-£13047; £12162-£15249  
The National Advisory Body for Local Authority Higher Education has approved an expansion of courses in Information Technology at the Polytechnic. As a consequence of this approval, applications are invited from good Honours graduates, preferably with recent research or industrial experience, to contribute to the teaching and research activities in the following areas:  
Programming and programming methods  
Artificial Intelligence  
Data organisation and processing  
Information technology  
Microprocessors  
Electronics  
Telecommunications  
Information systems  
Application forms and further details from the Staffing Office, The Hatfield Polytechnic, P.O. Box 108, Hatfield, Herts. (Hatfield 8810, ext 308). Please quote reference 588  
**CLOSING DATE 28 FEBRUARY 1983**  
**THE HATFIELD POLYTECHNIC**

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**SAUDI ARABIA**  
**FIELD ENGINEERING MANAGER**  
Rola Trading Corporation are the Saudi Arabian distributors for Data General and other major American principals. This expanding organisation with a satisfied customer base and maintenance contracts worth £1 million requires an experienced Field Engineering Manager for the computer division. Major benefits of the employment package are:  
1. Two-year contract on married status  
2. Salary package (at current exchange rates) of basic salary £25,000, with annual performance related bonus giving potential earnings of £30,000 p.a.  
3. Free furnished accommodation  
4. One month's annual vacation, airfares paid to Europe  
5. Free medical treatment  
Only experienced candidates should apply with C.V. to Computer Weekly Box 1241. Interviews expected mid February.

**ADVERTISING/MARKETING INFORMATION SYSTEMS PROGRAMMER to £12,000**  
IMS, a rapidly growing US based computer services company, are seeking a highly motivated applications programmer to help meet the increasing needs of our European clients. Possessing one or more of the following increases your odds:  
1. DEC 10/20 experience (we have two DEC 2060's)  
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3. The ability to work independently, without supervision, in a demanding, results oriented environment  
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5. Market research background  
6. Knowledge of a DBMS package such as 1022, FOCUS, System 2000 etc.  
7. Knowledge of SPSS, SCSS, IDA, etc.  
This position will require a period of education in New York. After this you will report directly to our UK Managing Director.  
Please reply with C.V., salary history and requirements to:  
**Managing Director**  
**Interactive Market Systems UK Limited**  
Grosvenor Gardens House  
Grosvenor Gardens  
LONDON SW1W 0BS  
**IMS**  
New York, Los Angeles, San Francisco, Toronto, Chicago, London, Paris, Hong Kong, Singapore, Melbourne, Oslo.

**Datasense Ltd.** has long established itself as one of the leading IBM system/38 software houses and consultancies and is now extending its sphere of operation to include **RECRUITMENT** of suitable personnel throughout the whole range of the Computer Industry. We have experienced recruitment consultants manning the operation and can bring many years expertise to bear in finding you the position you are seeking. Below is just a sample of some of the positions clients have asked us to fill but if the position you are seeking is not there give us a call to see whether we can help you.

**Process Control Engineers**  
London Based To £20,000  
Specially qualified applicants must have a degree gained in an engineering discipline and must be Chartered Engineers. With a minimum age of 25, but preferably over 30 they should possess at least 5 years' experience in the Petro-Chemical field. A background of instrumentation or telemetry in real-time computer systems is also required. RS100

**Software Engineers**  
Switzerland To £12,000 + Excellent Expenses  
Successful applicants must have a degree in a numerate discipline and be able both to read and write technical German. A minimum of 3 years experience (gained in a disciplined environment) of real-time systems development and integration is essential. No specific language or hardware is essential but a background of telephony would be preferred. RS104

**Systems Programmers**  
Surrey To £15,000  
An excellent career move for a software experienced DOS/VSE Systems Programmer to join a go-ahead department. If you have ASSEMBLER and DOS/VSE experience preferably with some CICS or DL1 knowledge then the rewards include profit-share, non-con pension and subsidised MORTGAGE. RS109

**Supervising Systems Programmer**  
Sussex To £15,000  
A vacancy has occurred for an experienced DOS/VSE systems programmer with ASSEMBLER, CICS and DL1 expertise to supervise a compact team of systems personnel. Some managerial experience would be preferred but is not essential. Excellent fringe benefits and commutable from most areas. RS111

**Ferranti Argus 700**  
Scotland £excellent  
Applicants should have a minimum of 3 years experience in real-time software systems orientated towards process monitoring and control, preferably gained in the Petro-Chemical Industry. The language used is CORAL and the successful applicant must have an in-depth knowledge. RS102

**Programmers**  
America/London/Europe To £15,000  
Successful applicants must be prepared to work in an environment both to develop packages and work on client sites and have a minimum of 1 1/2 years IBM System/38 RPG III experience. Benefits include Bonus and for the higher levels a company car. RS124

**Software Programmers**  
Italy To £14,000 + Excellent Expenses  
To be successful, it is essential that applicants have a degree in a numerate discipline and a minimum of 5 years experience of IBM hardware using ASSEMBLER and either PL1 or COBOL. A sound working knowledge of Data-Retrieval, Database Operations and Telecommunications is also required. The applicants should also have good working knowledge of French. RS105

**Junior Software Programmer**  
Italy To £12,000 + Excellent Expenses  
Although a junior member of the team the applicant must have a degree gained in a numerate discipline and a sound working knowledge of French. He/she must also have a minimum of 2 years ASSEMBLER experience gained in an IBM environment coupled with extensive OS JCL knowledge. RS106

**Project Leaders**  
London To £13,500  
Experienced IBM Project Leaders are required by a major West End installation. The successful applicants will have a minimum of 5 years' technical background including COBOL programming and analysis and should also have some supervisory experience. Fringe benefits are excellent. RS114

**Analysts**  
London To £12,500  
Experienced IBM analysts are required for this financial organisation. Successful applicants will have a COBOL programming background and have knowledge of CICS and preferably DL1. Fringe benefits are as expected from a large organisation. RS113

**HP3000 Analyst/Programmer**  
London To £12,000  
An analyst/programmer with a minimum of two years COBOL experience and a knowledge of IMAGE, VIEW and QUERY is required by a major oil company in the West End. Excellent benefits including non-contributory pension and a stock ownership scheme. RS112

**HP1000/3000 Software Engineers**  
Scotland To £12,000+  
These positions would be suitable for applicants with a minimum of 3 years experience of Hewlett Packard equipment using either PASCAL or RAPID. A knowledge of real-time, communications and database handling is also essential. RS103

**Analyst/Programmer**  
Middlesex To £12,000  
A minimum of 2 years experience of IBM System/38 using RPGIII is required for this position working for a large organisation in Middlesex. Excellent opportunity and good career prospects for the successful applicant. RS120

**DOS/VSE Shift Leader**  
City To £11,500+  
3-4 years DOS/VSE, VM, CICS experience is required for this position operating IBM 4300 equipment. The successful applicant must have in-depth technical knowledge and the ability to control staff on a day-to-day basis. Fringe benefits include non-con pension, luncheon vouchers and a subsidised MORTGAGE. RS118

**Senior Programmer**  
Sussex To £10,000  
A large international organisation based in Sussex has a requirement for an IBM COBOL programmer with a minimum of 3 years' experience preferably with a knowledge of CICS and DL1. Superb fringe benefits and easily commutable. RS110

**Analyst/Programmer**  
Surrey To £9,500  
An opportunity for a young analyst/programmer with a minimum of 2 years' programming and 1 years' analysts experience in RPG II on a System/34 using MAAPICS to join a young team working in the leisure industry. Good fringe benefits and excellent working conditions in rural Surrey but easily accessible from both London and the home counties. RS107

**Programmers**  
Surrey £8,500  
A minimum of 1 years' RPGII experience gained on System/34 using MAAPICS is required by a progressive site based in Surrey. The company is heavily committed to computing and can offer excellent career progression to a young programmer. RS108

**Network Operator**  
City To £7,800  
A large financial organisation are looking for a DOS/VSE, CICS operator with a minimum of two years experience ideally gained on an extensive network to join their dynamic team. A two-shift system is in operation, (no nights) and benefits are excellent including a subsidised MORTGAGE. RS116

For any of these positions please phone Ray Slattery (quoting appropriate reference number) on 01-803 8616, or write to him at:  
**DATASENSE LIMITED**  
Blue Line House, Angel Road, Edmonton, London N18 3BJ

*Apply via 1.54*

**datasense**



## Network Operator

£7000 inc. + benefits

INTERNATIONAL COMMODITIES CLEARING HOUSE is a unique organisation providing clearing and guaranteeing services for its members, mainly brokers trading on the Commodity Markets. Backed by a highly sophisticated computer system, the company has enjoyed tremendous growth in recent years.

The current hardware configuration comprises 3 X IBM 4341's, providing a real-time system under VM/370, DOS/VSE POWER/VSE and making extensive use of CICS/VS. The operation supports a network of over 450 VDUs and teleprinters, which will continue to expand as more terminals are installed in clients' premises. Fiscal Mito 4800 bps modems are used extensively throughout the network, and 11 T 3608 front end processors have recently been installed. Network Management Systems are being evaluated to incorporate current, and provide additional, diagnostic capability.

The recent expansion of network services has created a vacancy for a bright, young operations professional to join an experienced network team. Candidates will have spent at least two years working in a large IBM installation and

should demonstrate a sound knowledge of DOS/VSE and CICS/VS. This opportunity is ideal for those anxious to work in a progressive, large machine environment, but who currently feel they are unable to progress. ICCH provides excellent training facilities and is committed to promotion from within based on an individual's ability.

A two shift system is in operation. Fringe benefits include a Non-Contributory Pension Scheme, Staff Loans, Subsidised Lunch Facilities, Interest Free Loans for Season Tickets, Four Weeks Holiday, Sports and Social Club, and later you may qualify for a Mortgage Subsidy.

Contact Ref MT/700 for further details and immediate appointment for interview.

**ICCH**

## Project Leader

MANUFACTURING SYSTEMS to £12,750

Our client, Coca Cola Southern Bottlers, is one of the biggest manufacturers of soft drinks in the UK. The name Coca Cola is synonymous with success. Why not become part of this formula and LEAD a team developing one of the most sophisticated manufacturing systems to be found in industry?

Central processing facilities are based on new DEC VAX hardware with a countrywide communications network linking 24 depots and 3 factories. It is a highly ambitious development programme that will culminate in the implementation of a fully integrated manufacturing system to include Buying, Production Planning, Recipe Control, Load Scheduling, Stock Allocation and Vehicle Routing. To ensure the success of the project, the company intend recruiting a talented Project Leader with the right blend of technical and commercial business skills.

Applicants will have a background in production control and have played a senior role in the development cycle of a major system. You will be able to communicate effectively and inspire and motivate a team of hard working professionals. Fundamentally it will give you the chance to bring your creative flair into an

environment committed to the use of advanced computing techniques.

Head office is in Sunbury-on-Thames, Middlesex, but the nature of the job will demand some travel within the UK. The starting salary is highly competitive and the usual large company benefits, including Assistance with Relocation and BUPA, will apply. To find out more about this outstanding opportunity and to arrange immediate interviews contact Ref DMJ/800 without delay.



## Programmer/Analyst

COBOL to £10,000

The expression 'small is beautiful' is certainly appropriate when considering this opportunity. Provided you can use the latest in hardware/software technology, working in a small unit will give you far greater experience, considerably broaden your professional skills and allow you the chance to make a positive contribution.

HARP HEATING is a young, dynamic organisation who have grown into Britain's largest, independently owned installer of domestic central heating. They recognise computing as fundamental to continued business success and are currently investing in the development of new, on-line systems. To cope with this expansion of computing facilities, the company require an additional Programmer/Analyst.

Experience of COBOL (hardware background irrelevant) is essential and ideally you will have some knowledge of systems design. Personality is important and it is anticipated that you will be young, ambitious and able to work with the minimum of supervision.

The company are housed in pleasant modern offices in BROMLEY on the London/Kent borders. It's close proximity to motorway

networks and public transport makes it a very convenient location.

If you are looking for a challenge in a job providing excellent long-term prospects then contact us without delay. Quote REF MJ/900 for further information and immediate appointment for interview.



## Senior Programmer/Analyst

DEC/COBOL Gloucester (£ neg)

Renowned individually for the excellence of their vast product ranges, the amalgamation of Birds Eye and Walls has without doubt created the UK's most formidable and successful manufacturer of high-quality foodstuffs.

Computing maintains a strong presence in almost every sector of business activity and in order to develop a fully integrated Administrative System. The company has made a significant investment in distributive processing based on DEC VAX 11/780's. The communications network extends countrywide and the system is now fundamental to the efficient control of what is a high volume and fast moving business. Additional mainframe facilities are currently processing a diverse range of major commercial applications. It is an impressive operation and one that will continue to keep pace with demand.

Supporting the distributive systems is a vital function and it is in this area that the organisation intend recruiting an experienced Senior Programmer/Analyst. Candidates, with a good academic record, should have at least 2 years Cobol Programming experience with a DEC environment. You will have been involved

with the implementation of new systems and be able to demonstrate some experience in the area of system design. Maturity, reliability and initiative are all essential qualities together with the confidence to fit into a demanding and highly challenging environment.

The position is based in Gloucester and is expected that you will be currently living within a commutable distance of this very attractive location. Shift working is operable.

The starting salary is competitive and will reflect your experience and ability to make a positive contribution. Fringe benefits are those you would expect from a company of this stature. In addition to the technical attractions of the position the company offer first class career prospects. For further information about this exciting opportunity and all necessary interview arrangements contact Ref MJ/801 without delay.



# THE CITY IS A WONDERFUL INSTITUTION...

How does working for a City Insurance group, based in North Kent sound?

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Due to expansion and to meet the challenge of developing new systems, our clients now wish to recruit a Team Leader and two Analyst/Programmers.

The site is within easy reach of Surrey, London and Essex as well as Kent. Benefits include flexitime, reduced rate mortgage, insurance schemes and L.V.'s.

**TEAM LEADER**  
to £14,000

You must have a minimum of 5 years within the D.P. industry which will include a programming background and a minimum of 2 years analysis experience gained preferably within the City Insurance market environment. You will have a knowledge of the design and writing of real-time transactions and also good communicative and leadership skills.

**ANALYST/PROGRAMMERS**  
to £12,000

You will have one year's analysis experience, preferably gained in the insurance industry, backed up by approximately two years programming. You must also have the ability to liaise with users at all levels.

For more information and immediate interview telephone Sandra Hersh on 01-734 7394, or on 01-458 6988 during evenings and weekends.

# ...BUT WHO WANTS TO WORK IN AN INSTITUTION?

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43-44 GREAT WINDMILL STREET, LONDON W1V 7PA  
TELEPHONE: 01-734 7394 24 HOUR ANSWERPHONE

ASSOCIATES

## FINANCIAL MODELLING CONSULTANTS

Our client is one of the most successful and profitable international computer service organisations in the UK. They offer a full range of services to management, including financial and corporate planning. Their success is based on a continuing philosophy of recruiting expert committed staff in key market disciplines, and their enviable reputation for product innovation. In order to enhance the excellent pre- and post-sales support that they provide, they now seek two professionals with experience of Financial Modelling for the positions of:

### CONSULTANT

up to 10K

- ★ Ideally you will have a degree
- ★ You will currently be working with financial modelling packages, either as a user or in a support role.
- ★ You will have good communicative skills, both written and verbal.
- ★ You can work well under little supervision and have a good understanding of business operations.

### SENIOR CONSULTANT

up to 12K

- ★ You should have a degree, plus three years' computing experience.
- ★ You will have experience in sales support for a software house, bureau, or manufacturer.
- ★ Or, you will have used a financial modelling system (preferably FCS-EPS) in a senior role in a user organisation.
- ★ You are looking for an opportunity to gain project management experience on a variety of applications.

These positions are based in Central London. If you enjoy variety and challenge and are interested in a positive career progression, telephone HUGO FAIR on 01-828 2416 or write enclosing a brief résumé (quoting Ref: HF/101)

205 VICTORIA STREET, LONDON SW1E 5NE  
TELEPHONE: 01-828-1574/1327

Handwritten signature: H. J. Morris

**Knight**

### Recruitment

14 Old Park Lane, London W1Y 4NL

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The Hunterskil Group

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### DONCASTER METROPOLITAN BOROUGH COUNCIL

FINANCIAL SERVICES  
Deputy Data Processing Manager & Technical Support Manager, P02 (1-5) 511000-513110

The Computer Division provides a wide and growing range of services and operates a twin ICT 2802 - one under VME and the other under VME-George 3 and has extensive line facilities. The Deputy D.P. Manager is responsible to the D.P. Manager for the day-to-day running of the Computer Section, ensuring that the activities of the section meet the designed needs. The post is also specifically responsible for technical support to the section and other users and also for all services connected with data-based development.

Applicants should have a minimum of five years' experience in management of staff in either systems, operations or technical support and should also have a degree or equivalent qualifications.

Assistance with housing and removal expenses in appropriate cases.

Application forms and further details from Chief Executive (Personnel Section), 2 Priory Place, Doncaster DN1 1BN (Telephone: 01924 20211). Closing date 17th February, 1983. We are an equal opportunities employer.

### PROGRAMMER BASIC

required to work in a commercial environment on a CMC Sovereign Installation. The Position is in a small department with the potential to become involved with some systems design work. Applicants should have at least one year's BASIC Programming experience in Commercial Systems.

Salary will be in the region of £8,000 P.A.; other benefits include four weeks' holiday, Pension Scheme, free life assurance and subsidised lunches.

Please write giving full details of experience to:

L. J. Morris  
G. P. L. Ltd  
Stirling Way  
Borehamwood, Herts

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Datatech is a significant member company of the internationally respected THORN EMI Group, specialists in the manufacture and design of sophisticated computer and data communications equipment. We are Europe's leading manufacturer of digital tape transports and Britain's highest producer of Modems for continuously expanding market-places.

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Sales experience and technical understanding of computer products is essential. You are probably currently employed as an OEM Sales Executive within a communications or computer oriented environment and you are looking to build upon your expertise in a company which offers excellent scope for career progression, a first-class portfolio in terms of advanced technology achievements and the opportunity to earn, for an on-target performance, a high salary. Communication skills are of paramount importance as you will be negotiating at the highest level. You are unlikely to be under 27, owing to the experience, technical competence and authority this position demands.

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Please apply with full personal and career details to Mrs Pat Hawtree, Personnel Department, THORN EMI Datatech Limited, North Feltham Trading Estate, Feltham, Middlesex. Tel: 01-890 1477.



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## MVS Systems Programmer

London

£Neg. to £13,000

An Engineering Company requires a Systems Programmer for their IBM installation on the South Bank of the Thames. Two years Systems Programming in Assembler under MVS/OS is essential for this position. An additional Programming background is also necessary. GMF4/1

## ICL Systems Programmers

West London & EC2.

£9,000-£11,000

Two clients require Systems Programmers for their ICL 2960 installations with similar experience.

The minimum experience necessary is 2 years VME or VME/B Operating Systems Software Supervisor, Comms or Micro Systems knowledge would also be helpful as would IPA and SCL. GMF4/2

## Programmer/Systems Analyst

West London - Middx.

£8,000-£10,500

An International Company situated in Middlesex requires an additional Programmer/Systems Analyst or a Systems Analyst/Programmer for their IBM 4331 installation. Candidates should have a minimum of 3 years experience in DP Development Two of which should have been in COBOL Programming. Knowledge of CICS/DOS VSE would also be an asset.

A progressive position will allow the successful candidate to be involved on the system. GMF4/3

## Programmers

SW London & the City

to £9,500

Programmers with at least 2 years PL/1 and/or Assembler are required for an IBM installation in SW. London and the City. Use of CICS would also be helpful. Candidates will work on Financial and Business Applications. Sophisticated Database Systems are in operation. GMF4/4

## Programmer & Senior Analyst

Herts/Essex borders

£9,000-£12,000 £12,000-£14,000

A large retail organisation requires further development staff for their advanced IBM installation near the Essex border. The Systems Analyst should have at least 5 years' systems experience on mainframe with some supervisory know how.

The Programmer will have had 2½ years COBOL and will have prospects of going into analysis. GMF4/5

## Senior Systems Programmer

West London

£14,000-£15,000

A new installation connected with world of show business requires a senior professional for their installation in Hammersmith. Extensive IBM Assembler Programming is required as are most of the following: DOS/VS-VSE CICS DL/1. The successful candidate must be able to appraise H/W and S/W, choose a Database System and will be responsible for a Technical Support Section that will grow to 4 people. GMF4/6

## Programmer or Programmer Analyst

City - EC4.

to £12,500

A Continental Bank requires a DP professional or one in the early stages of development for their Team based in the City of London.

At the Programmer level, the successful candidate should have a minimum of 2 years' COBOL on medium sized hardware. At the higher level, candidates should have had 4 years experience in COBOL and development. Burroughs and Banking experience would be very preferable also.

A confident sort of person is required, one who could go on to better things. GMF4/7

## Programmer & Programmer/Analyst

London WC2

to £9,000  
to £10,500

A Life Insurance Company requires a Programmer and a Programmer/Analyst for their Central London IBM 4341 installation.

Two years COBOL under OS VS1 is essential for the former position. The second position requires COBOL under OS/MVS and Jackson Structured CICS and DL/1 would also be helpful and all successful candidates should be able to lead a team. GMF4/8

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## PROJECT LEADER ANALYST PROGRAMMER

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+

GENEROUS RELOCATION

### The Company

Our client forms part of a diverse major international corporation with sites throughout the world. It manufactures and markets a range of high quality consumer products, and is a market leader in its field.

### The Installation

The company's system is based on a recently installed IBM 4300 series mainframe using CICS and database, offering local and remote on-line and batch facilities. New developments include payroll, production and material control, marketing, personnel, purchasing and financial systems.

### The Positions

#### PROJECT LEADER

Our client regards this as a key position. The successful candidate will have total responsibility for the management of projects from

feasibility study to implementation. Candidates must be able to demonstrate successful relevant experience, ideally gained within an IBM DOS installation.

The position offers considerable scope and challenge, and will appeal to a self-starter wishing to gain further management experience.

#### ANALYST PROGRAMMER

This is an opportunity for a young ambitious IBM C/obol programmer with at least twelve months analysis experience. The successful candidate will work on a variety of interesting projects. Career prospects are excellent.

#### The Area

offers a wide choice of reasonably priced housing within easy commuting distance in urban, coastal and attractive rural locations and is well served by motorway and inter-city rail links.

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# EXTRA TALENT

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## SYSTEMS ANALYSTS & PL1 PROGRAMMERS

Your skills need not be "Out of this world" to merit consideration by our client, whose name is an international symbol of quality and prestige. With modern offices near Watford, new development work on IBM 4341, database and on-line techniques, new stimulating career opportunities are now offered to TWO SYSTEMS ANALYSTS and TWO PL1 PROGRAMMERS.



**SYSTEMS ANALYSTS**...Ideal candidates will be under 35, with 2-4 years experience on any machine. Preference will be shown to those people who have been involved in projects from feasibility to implementation. Plus factors are knowledge of CICS DL1 or IMS... but training will be provided for suitable applicants.

**PL1 PROGRAMMERS**...Here the requirement is a minimum of ONE YEAR'S experience of PL1, with knowledge of CICS DL1 or IMS desirable. Again, training in this useful knowledge is offered.

**SALARY RANGE**...Analysts...£9500...£11500  
Programmers...£8500...£11000

Relocation assistance will be given where applicable.

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Computer Personnel required urgently for a Computer Centre in Riyadh, Saudi Arabia (Perkin Elmer 52/50). Construction schedulers, FORTRAN Programmers with knowledge of critical path method plus engineering COBOL Programmers and Systems Analysts with a minimum of five years' experience for above gained in any middle or major sized computer installation. Accommodation and Medical care provided. Please indicate present salary and forward with C.V. and references to: Simon Gendi, D.P. Manager, Al-Murabba Computer Centre, PO Box 3508, Riyadh, Saudi Arabia. (2302)

### PROGRAMMER

Our client requires a Programmer to work on the development of Accounting/Payroll programmes.

The successful applicant will have a minimum of 2 years experience in Accounting Systems, with the experience of programming IMOS/COBOL on NCR and a genuine interest in developing Software from scratch.

Salary negotiable. Excellent working conditions.

Please ring or send personnel C.V. Urgently to P.B. Appointments Ltd., Coltingham House, Gladstone Road, Wimbledon SW19 1QM Tel: 01-843 3281/2. (2343)

## COMPUTER OPERATIONS VACANCIES

### Leeds

We are the fourth largest Building Society in the United Kingdom with a large and well established D.P. Department based at our Leeds Head Office. The Society has an extensive on-line system to its branch network supported by two IBM 3031 processors, and an MVS/JES2 operating system with CICS. The on-line system is now undergoing major enhancement and the Society is developing advanced management information systems.

Additional staff are required to strengthen the Computer Operations team. The work is challenging and varied and offers the successful applicants the opportunity to work in an advanced computer installation, utilising the latest hardware and software.

There are vacancies for additional operations staff as follows:

Senior Operator/Operators c. £6,400 + shift allowance.  
Candidates for these positions must have at least two years operations experience in an IBM mainframe installation preferably in a VS environment. A practical knowledge of JCL and utilities together with experience of a large network operation would be desirable.

Network Controller c. £7,500.

Expansion of network services has created a vacancy for a bright, young operations professional to join an experienced network team. Candidates will have spent at least two years in an advanced telecommunications environment. Knowledge of VTAM/NCP internals would be most useful.

#### Benefits

The Society is committed to the use of modern data processing technology and therefore can offer excellent scope for career progression with the opportunity to be involved in the operation of advanced systems.

Excellent remuneration package in keeping with these challenging career opportunities which includes contributory pension scheme, free life assurance and concessional mortgage assistance.

Interested applicants should telephone Leeds 438181, Ext. 448 for an application form and vacancy specification quoting reference number CW29.1 or write to:

Mr. J. Clark MBIM, Personnel Manager,  
Leeds Permanent Building Society, Permanent House,  
The Headrow, Leeds LS1 1HS.

Enquiries will be treated in the strictest confidence. Envelopes should be marked "Confidential".

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Your task will involve developing and supporting a wide range of application systems. If you feel that your experience equips you to provide technical support to a given set of applications in the field service area related to:

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- \* Enhancement to existing systems.
- \* Trouble-shooting

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Telephone Gina Richards on 01-572 7455 for further information and an application form or write to her with career details.

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Do you have broad experience as a  
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PROGRAMMER?

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STOP

YES

Do you have a degree level education and  
experience on mini/micro computers, multi-  
access and real-time systems?

NO

STOP

YES

Do you want to break new ground in  
advanced real-time data handling  
and display systems?

NO

STOP

YES

Do you want to work for a major company  
in the south of England with a large and  
sophisticated software centre?

NO

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which post interests you to Confidential Reply  
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London, W1A 1DS.

Applications are forwarded to the client  
concerned, therefore companies in  
which you are not interested should be  
listed in a covering letter to the  
Confidential Reply Supervisor.

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## Computer Operations at Harwell

Harwell, pleasantly situated between Oxford and Newbury, is one of the largest  
research and development laboratories in Europe. To support our activities  
Harwell has a major computer complex based on IBM 3081K and 4341 compu-  
ters plus a CRAV 1-S.

We now have a number of vacancies for computer operations staff who are  
prepared to work shifts. Applicants with several years' experience of computer  
operations and a good working knowledge of IBM systems running MVS, plus at  
least two 'A' levels, will be eligible for appointments with starting salaries of up  
to £9,846 (including shift allowance).

There are also vacancies at less senior levels for applicants without these  
qualifications, offering starting salaries of up to £6,280 (including shift allow-  
ance). Part-time posts at these levels may also be available.

For an application form, please contact Mrs R. Holdbrook, Recruitment Section  
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2846.

(2298)

HARWELL



### JUNIOR SYSTEMS PROGRAMMERS

CENTRAL

TO 13,000

Due to a major conversion project this international concern retaining IBM  
4341, GP.2 has urgent requirements for IBM MVS, VM or CICS Systems  
Programmers, min. 18 months experience Assembler required. Excellent  
benefits.

### SNR. PROGS/PROJECT LEADERS

SURREY/SOUTH WEST

TO 13,500 NEG.

One of the UK's largest and most successful commercial organisations seeks  
first class IBM Senior Programmers through to Project Leader level for major  
development running on IBM 4331 under DOS/VS shortly converting to VM,  
MVS. An in-depth knowledge of two of the following Cobol, PL1 or Assem-  
bler plus a genuine desire for career development is needed.

### PDP PROGS and ANALYSTS

£9-£12K

Fast expanding computer services organisation require Programmers or  
Analyst Programmers with 18 months + exp. using BASIC +, FORTRAN or  
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enthusiastic and conscientious persons to progress.

### ANALYST PROGRAMMERS

CENTRAL

TO £11,500

This UK market leader requires IBM Cobol Programmers with experience of  
analysis. Applicants should have first class knowledge of DL/1, plus some  
exposure to T.P. Monitor to join development team embarking on a major  
expansion program. Call now for more details.

### PL1 OR COBOL

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TRAIN ON CICS and DL1, an immediate career opportunity has arisen for a  
Programmer with solid PL1 or COBOL experience. Our client, a large manu-  
facturing company, has IBM 4341 hardware and makes extensive use of CICS  
and DL1, any existing knowledge of which would be thoroughly rewarded.

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SYSTEMS ANALYSTS

### Project Managers

Berks/Bucks

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Profitable engineering subsidiary of large group require  
two, aged 30-45 years with extensive systems analysis and  
successful large project management experience. One will  
run large IBM mainframe database conversion project;  
second will head up international systems development on  
IBM S/34 involving overseas travel. Ref. 517

### Micro Specialists

West London

£10-15K

Three software engineers required by UK subsidiary of  
American company marketing specialised micro based  
products through dealer network in UK and Europe.  
Degree/HNC/HND level candidates with at least 3 years  
Assembler/Basic experience; DEC PDP familiarity desirable.  
Ref. 113

### Analyst

Berkshire

to £11K

Local authority seeks analyst with minimum 4 years  
experience for expanding ICL ME29 installation using data-  
base and growing terminal network. A Cobol background  
essential; IDMS and ME29 teleprocessing experience  
useful. Most important is higher educational standard and  
personality. Ref. 554

### Analyst/Programmer

Berkshire

to £11.5K

Pharmaceutical company seeks analyst/programmer for  
IBM mainframe using PL1 CICS and TOTAL. Some program-  
ming is required but emphasis is on analysis. Candidates,  
ideally in late 20s, should have several years analysis  
experience, some Basic knowledge desirable. Re-location  
assistance available. Ref. 562

Write or telephone:

**London West Computer Recruitment**  
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LWER

## London West Computer Recruitment

### Systems Analyst

Dorset

£12-15K

Analysts and senior analysts required by large financial  
organisation in an attractive coastal location. An IBM back-  
ground is useful but not essential. Career opportunities exist  
for graduate candidates with demonstrable success in  
analysis work in any commercial applications. Ref. 572

### Programmers, A/Programmers

Dorset

£ negotiable

Subsidiary of large computer group engaged in developing  
new automation system products seeks several program-  
mers and analysts/programmers. Candidates should be of  
degree or equivalent standard and have 3 years ex-  
perience including Assembler, Basic and Pascal. Re-location  
assistance available. Ref. 557

### Programmers, A/Programmers

Somerset

£ negotiable

Large ICL and CMC Reality Data Centre in attractive loca-  
tion has vacancies for programmers and analyst program-  
mers with Cobol and Basic experience. Knowledge of CMC  
or similar systems an advantage. Competitive salaries. Re-  
location assistance available. Ref. 570

### Programmers

Dorset

to £10K

Three programmers required by medium sized, independ-  
ent, manufacturing company for ICL ME29 installation.  
Minimum 1 year Cobol experience essential; knowledge of  
MTS an advantage. Competitive salaries according to  
experience and re-location assistance provided. Ref. 568

### Salesman/Account Manager

West London

£16-18K + bonus + car

UK subsidiary of American company marketing specialised  
micro based products seeks entrepreneur to gain new sales  
and manage existing distributor accounts in UK and Europe.  
Age 30-40 years; sales experience in telecommunications  
market essential. Much travel; company car; expense  
budget. Ref. 113C

### Senior Real Time Specialists

Berks, Wilts

£12-15K +

A newly formed division of a substantial systems company  
seeks senior consultants and analysts for the development  
of energy management systems. Candidates should be  
graduates, 30-45 years; with extensive real time ex-  
perience and variety of projects. Re-location assistance  
available. Ref. 514

### Real Time Consultants

Berkshire

£10-12K

A major software and consultancy organisation seeks con-  
sultants with experience in real time systems for pre and  
post sales work. Degree standard candidates in late 20s  
with experience in commercial and scientific projects are  
preferred. Ref. 552

### Real Time Software Engineers

Somerset

to £14K

A high technology subsidiary of a major group seeks  
analysts, systems designers and programmers to help  
develop specialised control display and signal processing  
systems. Candidates must have degrees in appropriate  
disciplines. Vacancies are at all levels; re-location assistance  
is available. Ref. 573

(2391)

# Computer Output Microfilm

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Several exciting opportunities exist with one of the country's leading COM/Laser Printing Service bureaux who last year increased their  
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£10,000

The successful candidate will  
possess at least two years'   
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ferably gained in a business  
environment. You will be ex-  
pected to liaise with users of  
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analysing new client require-  
ments and enhancing exist-  
ing applications. Full training  
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### Senior

Operators

£7,750

Ideally applicants should  
have a minimum of three  
years' COM operations exper-  
ience preferably gained on  
Datagraphix 4500 series  
equipment although consid-  
eration will be given to candi-  
dates from a similar environ-  
ment. Both sound knowledge  
of COM production and some  
supervisory experience is  
essential as the successful  
candidates will be considered  
for promotion to Shift Leader  
level.

### Operators

£6,750

Our client is also seeking to  
recruit additional COM  
operators with a minimum of  
one year's relevant expertise.  
Ideally candidates should  
possess a knowledge of the  
Datagraphix 4500 series or  
comparable hardware. Op-  
portunities exist for operators  
to progress to more senior  
levels.

### Trainee

Operators

£5,250

Candidates should be keen to  
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training will be given to the  
ideal applicants. You should  
be educated to 'A' level stan-  
dard and be keen to join a fast  
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Duration: 6-12 Months

Start Date: Feb. ASAP

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Duration: 6-12 months

Start Date: Feb. ASAP

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Duration: 6 months

Start Date: Feb.

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Duration: 6-12 months

Start: ASAP

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**DALROTH**

U.S.A.

## Systems & Programming Opportunities

**IBM 4331 DOS/VSE**  
Salary range US\$20-35,000+ benefits

Systems Analysts, Analyst Programmers and Programmers are required for a successful American organisation in the services industry, with its headquarters in Virginia.

The Company uses a wide range of computer hardware for various applications although the current requirements are related to the IBM 4331 based systems. A minimum of three years' DP experience is essential and a COBOL programming background is required for all positions. The main requirement is for Analyst/Programmers although opportunities also exist for Analysts and Programmers. RPG and accounting systems experience would be useful but is not essential.

These are permanent positions although contract appointments will also be considered. Realistic U.S. salaries will be in the \$20-35,000 range plus fringe benefits including medical, travel, life assurance, etc.

Please contact Ian Murray West

## WEST GERMANY

## Systems Programmers c£700 p.w.

**IBM 3033 MVS/IMS**

Five Systems Programmers are required ideally on a contract basis for a major project in Central Germany to cover tuning, systems generation, enhancement, etc. Knowledge of PL1 or COBOL is also preferable.

Although some German ability would be useful this is not essential. Six-month contracts with extension options.

Please contact Roger Allington

## SAUDI ARABIA

## Sales

Basic c£18,000 tax free, on quota earnings, c£30,000 plus married accommodation, car allowance, home flights and medical cover

Our client, the exclusive Saudi Arabia representative for Data General, Tektronix, Calcomp and Printronix require two further salesmen to promote in particular the DG range of hardware and associated software.

Candidates must have a proven sales track record.

Please contact Jenny Dalrymple-Hay or Ian Murray West

## LONDON/HERTS BORDER

Systems Designers to £12,500 + Benefits

Senior Programmers to £11,500 + Benefits

Our client, a major financial institution, has a requirement for several experienced DP personnel for new development projects. The installation is IBM 4341 under OS and with a further IBM 4341 planned during 1983.

Systems Designers must have over three years' experience in analysis and design in an IBM commercial environment.

Senior Programmers must have over three years' OS/PL1, ideally using CICS and/or Assembler.

An above average employment package, including immediate mortgage subsidy, free pension and life assurance as well as other attractive benefits will be offered.

Please contact Colin Maslen

## LONDON AREA

## Sales/Support Manager

Salary £10-£12,000 basic + Car & Commission

Set-up situation. Successful small company requires an enthusiastic self-starter to set-up their LONDON operation.

The Company market is fully integrated hardware/software system for the Electrical Engineering industry; it is based on DEC 11/23 with graphics digitizers and a full range of applications software.

The successful applicant must have commercial experience, ideally handling financial applications such as nominal ledger, etc., be capable of handling client negotiations, assisting and training first-time users and sorting out basic DP implementation problems. Ideal would be some experience of DEC hardware and DIBOL. An academic or professional qualification would be advantageous.

Please telephone 01-483 2947 (Mon-Fri) or at weekends Roger Allington on Little Gaddesden (04384) 2638 quoting ref. 545

**DALROTH & PARTNERS LTD, 4 HALF MOON STREET, LONDON W1**

## COUNTY TREASURER'S DEPARTMENT

The County Council with offices in Barnsley have two 2966 4 MB ICL Computer Systems supporting considerable on-line, remote batch and conventional batch processing running under DME/G3 operating system, work is currently in hand to introduce message routing software on the 7806 FEP to give terminal access to both systems. Applications are invited from suitably experienced persons for the following posts:-

## SENIOR SYSTEMS PROGRAMMER

Grade P01A/B  
POST REF. T276 Salary £9,804-£11,164

Applicants should have a wide knowledge of the operating system and other ICL systems software. The successful applicant will lead a small team of specialists who are responsible for the maintenance and enhancement of a systems software which includes Communications Manager and Detadvice.

## SENIOR SYSTEMS ANALYST

Grade S01/2  
POST REF. T248 Salary £8,558-£10,071  
Grade AP4/5  
POST REF. T249 Salary £8,873-£9,325

Applicants should have wide technical experience preferably using data base techniques. The successful applicant for the senior post will be responsible for a small team of analysts and both successful applicants will be involved in the development of a wide range of systems for all departments of the County Council on both mainframe and mini/micro computers (whichever is the best medium).

The County Council operates a system of flexible working hours and payment of removal expenses, lodging and travelling allowances will be made in appropriate cases.

Please write for an application form, quoting the appropriate post reference, to the Chief Executive (Personnel), South Yorkshire County Council, County Hall, Barnsley S70 2TN or Telephone Barnsley (0226) 88141 Ext. 266.

Closing date for applications will be 11th February, 1983.

South Yorkshire County Council is an Equal Opportunities Employer.

**South Yorkshire County Council**  
SETTING THE PACE



(2347)

## COMPUTER HARDWARE PERSONNEL

Hewlett Packard HP 1000 computer and peripheral equivalent - fault finding and repair of Daniel Station and Interface, based Abu Dhabi. Contract by arrangement - 26K.

★ Also One Software Engineer as above

For further details please call MSA on 01-577 1293/677 1359 or 01-570 8832

MSA - VIDAP HOUSE GREEN LANE, HOUNSLOW, MIDDLESEX.

(2364)

## COMPUTER MEDIA SUPPORT ENGINEER

CIRCA £11,000 plus CAR

Thames-Precision Systems Limited, an established European manufacturer will rapidly expanding markets in the UK, are seeking to appoint a Computer Media Support Engineer.

Based at Dunsbury, the successful applicant will be responsible for providing technical and marketing support to our sales personnel within the video, audio, distribution and U.S.A. markets. He/she will be required to liaise and assist head office product managers and manufacturing plant personnel and will involve travelling to major commercial centres in the UK and manufacturing centres in France.

Applicants should have spent a minimum of five years in the data processing industry providing technical support in the media and hardware sector. A knowledge of a wide range of systems from mini to large main frame with a particular regard to flexible disk, computer tape and disc pack transports used by the U.S. industry is also essential.

This position carries the accepted range of benefits associated with a major employer. Written application detailing age, career history and full details of experience and qualifications should be submitted to:

MR D. BALD, SALES DIRECTOR  
**RHONE-POLENC SYSTEMS LIMITED**  
High Street, Hounslow Regis,  
Dunstable, Bedfordshire,  
(Telephone: 0522 08051)

(2340)

## BOX NUMBERS

Box number replies should be addressed to:

Box Number 2/6 Computer Weekly  
Quadrant House, The Quadrant  
Barnsley, Surrey S12 6AA

## Elite Software Specialists- The search is on...

Six key Software Specialists are needed by my client. They will join a new Software Task Force, a concept being introduced to the company to tackle key development issues for future products.

The company is a world leader in its market sector and has been responsible for many major technological breakthroughs. In order to maintain this technical impetus, the company is expanding and moving to a new purpose-built Headquarters in Hertfordshire.

The company produces a range of state-of-the-art products for specific commercial markets, and as such, is helping low technology industries to use modern technology to improve quality and profitability.

The Software Specialists currently being recruited will be providing the software input to multi-disciplinary teams consisting of electronics, optics and precision mechanical engineering specialists. There is a strong element of starting a new development.

programme from scratch through to final test. We would like to discuss these career opportunities further with candidates educated to at least BSc in a numerate discipline. Candidates should also have experience of real-time minicomputer processing operating systems and multi-tasking. Experience of DEC PDP 11 would be a distinct advantage. The company currently uses R/T11, RSX/11 operating systems. High level languages such as PASCAL, is an advantage with FORTRAN. Assembler would be desirable.

As we are looking for high potential people, the five figure salaries which are negotiable up to £14,000 pa and general conditions will be attractive to candidates of the right calibre. To take things further, either send a curriculum vitae or telephone for an application form quoting reference FS/SS. These positions are open to both men and women.



## Cambridge Recruitment Consultants

1a Rose Crescent, Cambridge CB2 3LL. Telephone: 0223 311316.

## PSION MICROCOMPUTER PROGRAMMERS & ANALYSTS

Psion is a substantial and rapidly growing microcomputer applications and software house.

We require creative, skilled and able programmers and analysts. Applicants should have experience of assembly language and machine-code on one or more microprocessors. This is an exciting opportunity to work with a dedicated team in Central London in the fastest-growing area of computers.

Salary range £8,000 to £18,000 per annum, depending on skill, experience and creative potential.

PSION LTD, 2 Huntsworth Mews,  
Gloucester Place, London NW1  
Telephone: 01-723 8810 or 01-723 9406

(2272)

## FIELD ENGINEERS - EVERYWHERE

Our clients are leading manufacturers in their fields. All offer - growth, security, recognition and opportunities for career development. MICROS - SCOTLAND, LONDON, BIRMINGHAM, AYOON

Unique fairly describes our client whose growth is phenomenal - but controlled. Multi processors - H/W (chip level) and S/W involvement.

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American manufacturer of super minis - very fast - chip level work - US training and early promotion.

ARRAY PROCESSORS - LONDON, MANCHESTER  
Again H/W and S/W involvement - chip level work and prospects for support for suitable engineers.

All above jobs offer usual field benefits, car, BUPA and so on. Call KEITH WALLIS and cash in on your computer experience with any of the above or many other leading companies using our renowned service.

ALLTRONICS PEOPLE (AGY) 01-543 4844

(2348)

## FREELANCE

Work immediately available for Systems Programmers. Mandatory experience in DATAPOINT products (Database COBOL, DOS RMS).

LONG TERM CONTRACT TOP RATES

Please reply to BOX NO. 1242

(2341)

## LECTURER IN COMPUTING

Computer experience preferably with and business systems is necessary. Salary £3,200-£3,257 plus Overtime London

Details and application forms: Telephone 01-425 0221 and 97

Closing date: 11th February, 1983

(2377)

## MICRO COMPUTER SALES MANAGER

We are a multiple retailer of office stationery and equipment and have recently expanded into the field of Micro-Computers.

We are looking for a dynamic, energetic person, aged 25+ to control the sales operation in London. Enthusiasm, perseverance, ability to sell and to train others in the art of selling are essential.

Responsibilities will include customer liaison, sales development display and control of computer sales staff.

We will offer a competitive salary, pension scheme and staff discount.

If you have relevant experience and meet the above requirements apply to BOX NO. 1239.

(2369)

## CONTRACTS

We have urgent requirements for experienced or first-time contractors with the following skills:

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IBM IMS DB/DC PL/1

IBM IMS CICS COBOL

IBM CICS DL/1 COBOL

IBM SYSTEM 38 RPG III

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

If you require further information or would like to discuss contract opportunities generally, please send your C.V. or telephone Richard Netts or Chris Smith at:

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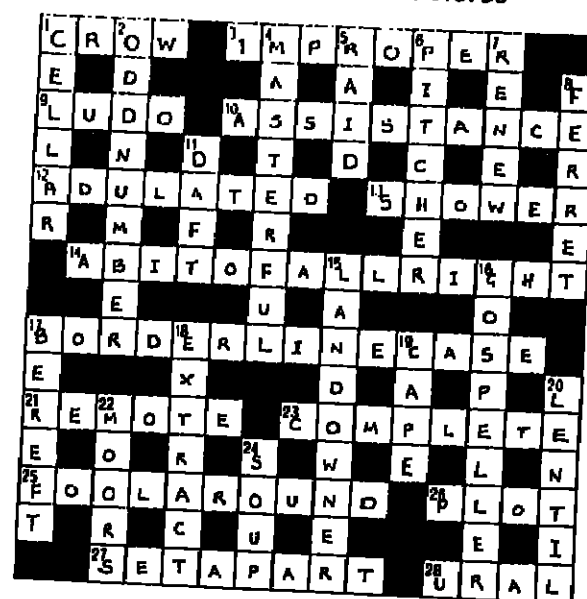
Scotth House, 189-173 Regent Street, London W1R 7FB

Telephone: 01-439 1856 Telex: 25851

London  
Brussels

Computing  
Services  
Association (2342)

Solution to Prize Crossword No. 36



THIS month's £10 prizewinner is Sheila Russell, a senior systems analyst with UCC in Birmingham. Prizes of £5 go to David Botbol, a systems designer with Sun Alliance in Horsham, and Peter Eccles, a software consultant with Leicester-based MSP.

# Rayner's

## COMPUTER SERVICES ASSISTANT

Salary: £5,500 p.a.  
Rayner & Co Ltd, a privately owned Food Manufacturing Company in North London, have a vacancy for a Computer Services Assistant reporting to the Computer Manager.  
The successful candidate will be a graduate in Business Studies or equivalent and probably seeking their first appointment. The ability to communicate with all levels of staff is important and an understanding of basic accounting procedures would be advantageous.  
The duties will involve:  
• Computer Operations  
• Testing and evaluation of software  
• User Liaison  
• Improvement and updating of systems  
• Programming as required  
The company operates a Hewlett Packard 3000 computer and full training will be provided.  
Company benefits include: four weeks holiday, pension scheme, sick pay scheme and subsidised canteen facilities.  
Application to: Mrs A. L. Scott  
Personnel Officer  
Rayner & Co Ltd  
Commercial Road  
Edmonton N18 1TQ  
Tel. 01-807 3080

(2229)

## SAUDI ARABIA SALES ENGINEERS SYSTEMS ENGINEERS

Rola Trading Corporation are the Saudi Arabian distributors for several major American printers. This expanding organisation now require Sales Engineers and Systems Engineers with mini-computer experience.  
Major benefits of the employment package:  
1. Two-year contract on married status.  
2. Refurnished accommodation.  
3. One month's annual vacation, air fares paid to Europe.  
4. Free medical treatment.  
5. Salary package (at current exchange rate) for:  
a) Sales Engineer basic salary £16-18.5K on target earnings £28-31K.  
b) Systems Engineer basic salary £17.5-22K with performance related annual bonus up to 25% p.a.  
Experience of Data General equipment and software would be a distinct advantage.  
Apply with cv to CW Box 1243.  
Interviews expected mid February.

(2378)

## Lothian Regional Council STEVENS ON COLLEGE OF FURTHER EDUCATION LECTURER B IN COMPUTER STUDIES

Salary on Scale: £7314-£9616  
required in the Department of Computing and Micro technology to teach a range of courses in computer application, operations programming awareness. Applicants should have relevant practical experience and possess a degree or other relevant qualifications.  
Application forms and further particulars from:  
The Principal  
Stevens on College of Further Education  
Bankhead Avenue, Edinburgh EH4 1JN

(1990)

## CAMBRIDGE CITY COUNCIL

### Systems Analyst

Salary up to £10,071 (SO1/2)

Applications are invited from suitably experienced persons for this new post in the City Treasurer's Department. The successful candidate will be involved initially in the development of new financial systems based on GL Plus for which training will be available.

The Council has recently installed an ICL ME28 which will be enhanced to cope with increasing demands by user departments for on-line information developments. This post offers career development in an attractive environment, Cambridge being the regional centre and an international tourist attraction. A contribution towards relocation expenses and the provision of temporary housing accommodation is available in appropriate cases.

Application forms, returnable by 28th January, 1983 are available from City Treasurer, The Guildhall, Cambridge, CB2 3QJ. (Tel. No. 0223 35877 Ext. 3071).  
The Council is an equal opportunity employer.

(2230)

CITY OF WALSFIELD METROPOLITAN DISTRICT COUNCIL FINANCE DEPARTMENT

### SENIOR PROGRAMMERS SO1 £8,656-£9,231

**PROGRAMMERS AP4 £6,873-£4,545**  
The above additional staff are required to enhance the range of services provided to all of the Council's departments. The next phase of development will involve a further extension of the existing large internal network. Extensive programming experience is required for the senior posts, together with the ability to make major contributions towards system design and work directly without supervision with user departments. Requirements for the programmer posts are at least two years sound programming experience and the ability to work directly with users within a defined system outline. C.M.C. experience is desirable but not essential. Further information can be obtained from Mr Twyble, Tel. Walsfield 370211, Ext. 203.  
Requests for application forms (accompanied by a s.e.e.) should be addressed to The Chief Executive, (Personnel Section), Town Hall, Walsfield, to be returned by 7.2.1983.

(2278)

### University of the Witwatersrand, Johannesburg COMPUTER SCIENCE SENIOR LECTURER

Applications are invited from suitably qualified persons, regardless of race, colour or ethnic origin for appointment to the above post, in the Department of Computer Science.  
Candidates from all areas of computer science will be considered; however, computer networks, operating systems, architecture, and software engineering are of special interest to the Department.  
The Department teaches courses in Computer Science at both undergraduate and postgraduate level. Research in several areas of Computer Science is actively pursued. Strong links with the Department of Scientific Engineering and the Division of Business Information Systems exist.  
The salary will be within the range R14 953-204 040 per annum. The initial salary and level of appointment will be determined according to the qualifications and experience of the successful candidate. Under certain circumstances a salary adjustment may also be payable. Benefits include favourable leave conditions, an annual bonus, pension and medical aid scheme and housing subsidy if applicable. (C-15/82) reported.  
The University will pay the return airfare of the successful candidate to this post from the Secretary of the South African Universities Office, 1000 Main Road, 2001, South Africa, with whom applications should be lodged by 22 March 1983.

(2202)

## Practical Computing

We currently require a bright enthusiastic

### SALES EXECUTIVE

to join one of Britain's leading Personal Computer

publications.

You will be selling a complete advertising package to our advertisers and their agents, including stand space at our very successful COMPUTER FAIR exhibitions.

Experience of both direct and telephone selling, preferably within publishing, would be a distinct advantage.

Knowledge of personal computers although desirable is not essential.

Salary range £8,300-£9,800, company car provided.

Applications with CV should be addressed to Ian Carter, Advertisement Manager, Practical Computing, Room L310, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS.

These positions are open to both men and women

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to £13,000 + BENEFITS

A major Financial Institution utilising IBM 4341 mainframes and a large communications network is seeking to expand a small Personal Computing team by the addition of two D.P. Professionals (one at a senior level) with experience in at least one of the following areas:

- ★ APL and associated products such as ADI, ADRS, APE
- ★ Management Information Data Base products.
- ★ Financial Planning Software.
- ★ Micro Computer technology and applications.
- ★ Word Processing and Office Automation.

The successful applicants will probably have had analysis experience and be able to demonstrate both "User Friendly" skills and the ability to handle small projects from inception through to implementation. For the senior position the candidate should be able to communicate effectively with senior management and have proven man management skills.

Conditions of employment and benefits are excellent including non-contributory pension, subsidised restaurant and BUPA membership. After a qualifying period there is an annual bonus and staff mortgage scheme.

To apply, or for further details, please contact LES COOK or JEFF RUBBERT in strictest confidence.

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01-388 0111 (24 Hours) (Lunch 12-13)

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# PROGRAMMERS

## Computer Auditor — business systems

c.£13,500

Thames Ditton, Surrey

The Milk Marketing Board is responsible for the collection and distribution of all milk produced in England and Wales and is also a leading manufacturer of dairy products.

As a member of a small team reporting to the head of Computer/Systems Audit, you will carry out your own audits, examining the adequacy of systems controls and clerical and accounting procedures. You will write your own interrogation programs and make written recommendations and suggestions as appropriate. You will assist user and computer departments in the design and implementation of controls in new developments.

Probably aged 25-35 you will have had at least 2 to 3 years' experience of computerised business systems and a sound knowledge of one or more of the following: COBOL, Filetab, systems analysis, systems development and implementation. Experience of ICL 2900 SCL or OS programming, accountancy or auditing is an advantage.

Company benefits are those you would expect of a large organisation.

Please write, in confidence, with full career details which should include your current salary, quoting Ref: FY/818, to:

**MMB**

Carol Carter  
Personnel Officer  
Milk Marketing Board  
Thames Ditton, Surrey KT7 0EL  
Tel: 01-398 4101, etc. 341.

(2294)

## Operating Systems Support

£10,000 to £14,000 plus car and other benefits

This is an unparalleled opportunity for someone interested in working with a modern computer operating system and to extend their knowledge and skills with a leading American state-of-the-art computer manufacturer.

Vacancies exist at our installations in the South of England and in the Greater Manchester area, and some overseas opportunities may also be available. Applicants should have experience in developing and/or maintaining a mainframe operating system at an assembler level. Experience with VAX, CDC, IBM, or Honeywell equipment would be especially valuable as would experience in writing or maintaining Fortran codes. Some travel within Europe and to the USA will be available to those interested in going places.

For further information please write to the Site Support Manager at the address below:

**CRAY**  
RESEARCH (UK) LTD

CRAY RESEARCH (UK) LIMITED  
Seymour House  
The Courtyard, Denmark Street  
Wokingham BERKS RG11 2BB

(2308)

## Freelancers . . .

In the North of England and Scotland who are available now or in the near future are invited to contact me, Peter Moore, to discuss a variety of interesting and rewarding assignments throughout the UK and overseas.

**P-E Computer Services Limited**

Wichester House, Fountain Street, Manchester M2 2EF. Telephone: 061-228 2776

**PE**

(2145)

## REINSURANCE SYSTEMS CONSULTANTS

- with experience of the development and implementation of complex reinsurance systems.
- ability to communicate with reinsurance and computer development personnel at all levels.
- based in Wimbledon, with travel opportunities to the U.S.A. and elsewhere.
- knowledge of U.S. reinsurance practices and statutory accounting would be an advantage.
- SALARIES according to EXPERIENCE and ABILITY.

Please write or telephone to Mr P. J. Cross or Mr R. H. Cardwell at 01-847 7411.

## CROSS COMPUTER GROUP LTD

Barry House, 20-22 Worpole Road, Wimbledon, London SW19 4DH

(2321)

## SMR

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When you are dealing with the major factors in your life you can only afford the best, and few things are more important than the development of your career. Currently, that is how the major computer manufacturers feel about their personnel selection and why such companies as CONTROL DATA, COMPUTER TECHNOLOGY DATA GENERAL, HONEYWELL, PERKIN ELMER, REDIFUSION, SPERRY UNIVAC and many others continually use our organisation for the recruitment of experienced sales people.

We fully understand the needs of such companies as well as knowing about the many job opportunities that never appear in the press. These well respected names depend on our professional skills and confidentiality. Can you afford to leave this?

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Allan Scott or Roger Dodd - ANY TIME!

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**CCAB** COMPUTER CONSUMER ADVICE  
BUREAU LTD.  
Computer and Recruitment  
Consultants  
5 Green Lane, Blackwater  
Near Camberley, Surrey

2345

### FIELD SERVICE ENGINEERS

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Team working environment - possible foreign travel (voluntary) - internal promotions - a chance to get into systems.  
If you have a sound technical background, seek to enhance your career into 32 bit CPUs and systems - then ring NOW.  
If you already have a superb mini system background this could be reflected in a basic of up to £14k in a managerial or support role.  
Don't delay ring Mike today  
01-848 6441 or 01-394 2388 (after 7 pm)

(2341)

**db executive (kingston) ltd**

(24-11)

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(2308)

## SALES BIT

# Why there are still plenty of jobs for the experienced

DISPITE the setbacks endured by many suppliers and end users in the computer industry, there is still an unsatisfied demand for experienced and accomplished people.

The two main reasons for this are: Insufficient people of the right quality; and a large proportion of people reluctant to change jobs at present.

The first reason has been with us for too long due, for the greater part, to a reluctance on the part of many suppliers and end users to invest in trainees, be they programmers, analysts, salesmen, or whatever. Everyone is looking for instant expertise and immediate financial return. In these days of economic uncertainty, everyone appears to be letting tomorrow look after itself, with the watchword: Survival!

The second reason is perhaps not so obvious. One of the major facts of economic recession is the loss of confidence that occurs at all levels of industry. This is particularly true of the employee who has enjoyed success with his present company.

Those who may be contemplating the benefits of alternative employment inevitably fall into the "devil you know" syndrome. At least, within one's present company any current or subsequent failure will be seen in the light of past success, thus generating a degree of latitude and understanding.

But failure with a new employer where no successful track-record exists must inevitably lead to early departure and prospects of social security. With this in mind it is easy to understand the reluctance of many people to put themselves on the market.

This must to some degree create a more settled workforce which will benefit many employers in the short term; and for many employees, staying put will be a sensible strategy. Having said that, for those employees who cannot keep up with the cost of living, the only alternative may be to make for pastures new.

December was an unusual month for my companies, Sales and Marketing Research.

Alan Williams

## PUZZLE ANSWER

